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CHILDREN
By Louise E. Hogan

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Emma P. McAlpin
HOW TO FEED CHILDREN 1901

A MANUAL FOR MOTHERS, NURSES,
AND PHYSICIANS

BY

LOUISE E. HOGAN

THIRD EDITION

PHILADELPHIA
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1899

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PREFACE.

THE substance of a number of papers that have appeared during the last two years in various journals* has been embodied in this book upon the request of members of the medical profession, mothers, and others interested in children. These articles have been carefully revised, and much additional material has been used. All statements made are based upon facts accepted very generally by scientists and physicians both here and abroad, where the greatest amount of original research has been made, and authority for these facts, when not credited in the text, may be found in the works of the following writers, which have been studied very carefully, in connection with much other reading relative to the subject: "Pediatrics," T. M. Rotch, M.D.; "Infant Diet" and "Therapeutics of Infancy and Childhood," A. Jacobi, M.D.; "Food in Health and Disease," I. Burney Yeo, M.D., F.R.C.P.; "Diet after Weaning" (Keating's "Cyclopædia"), by Samuel S. Adams, A.M., M.D.; "The Mother's Work with Sick Children," Professor J. B. Fonssagrives; "Practical Dietetics," W. Gilman Thompson, M.D.

The purpose of this book is to offer in a practical form a few suggestions concerning the application of

* Popular Science Monthly, Lippincott's, Babyhood, etc.

the principles of dietetics to feeding in the nursery and throughout the period of childhood.

It is also hoped that the book will meet the requirements of practitioners, who rarely have the time to direct in detail the management of children's diet. It is not the intention of the author to advise where a physician is needed, but rather to suggest to the mother or nurse when he should be sent for, and how he may be aided in his efforts by the exercise of intelligence and judgment in the selection and preparation of foods indicated for various ages and varying conditions of illness and convalescence. Owing to differences of temperament and constitution, each case needs individualization; hence, when there is the least doubt, even in conditions of health, a physician should be consulted without delay. In the hope, therefore, that when a physician is available the counsel given will be explicitly followed, this little book is earnestly commended to mothers and those in charge of children, as well as to physicians who may wish to be relieved of the tediousness of making specific the general laws regulating dietetic practice.

The author is deeply indebted to T. M. Rotch, M.D., Boston, for the use of his book "Pediatrics," and to Samuel S. Adams, M.D., Washington, Leroy M. Yale, M.D., New York, and Edgar Dubs Shimer, Ph.D., Professor of Psychology, New York University, for suggestions and assistance in revision of manuscript and proof.

LOUISE E. HOGAN.

PHILADELPHIA, April, 1896.

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HOW TO FEED CHILDREN.

CHAPTER I.

Reasons why Mothers should study Dietetics.

THE study of dietetics as applied to the nursery and the period of childhood is constantly brought to the notice of mothers. A practical application of theory to individual needs is of great importance whatever system of feeding is decided upon. The usual hap-hazard method is founded on ignorance. Some knowledge of the physiology of digestion is necessary to select the foods that are suitable for the requirements of infants and growing children. All parents should understand that the rearing of a child is fraught with great responsibility, which it is criminal to avoid. It is too frequently the custom among adults to think that what is provided for themselves in the way of food may be given with impunity to children. They forget that the food an adult can receive and assimilate does harm to the tender organs of a child,—organs that depend very largely for their development upon a proper selection and administration of assimilable foods. Carelessness and ignorance at this period of life are quickly followed by pernicious results. The treatment of almost all diseases of the digestive organs in children requires the special

study of foods and of hygiene, and many of them may be avoided by care in this direction. Any mother who will study the nature of food products, whether nitrogenous, carbonaceous, or mineral, their proportions of waste and water, those needed to build tissue, furnish heat, purify the blood, etc., will comprehend at once the value of dietetic knowledge in the selection and preparation of wholesome food for her family. This knowledge is the foundation of sound practical dietetics (Burnet), and the subject is one of universal importance. A nourishing diet must be supplied during the entire season of youth, and at the same time be supplemented by favorable hygienic surroundings and by plenty of exercise of various kinds to call every set of muscles into play ; want of sufficient exercise diminishes tissue-change. During this early period of life larger supplies of certain food elements are required than in adult life, when physical growth has ceased and bodily activity has grown less. It must also be understood that under various conditions in the life of the same child different foods and quantities will be required. The diet must be adapted to the power of the constitution at the time, and it must be of the highest nutritive value possible for present digestive power. If the child's digestion is normal, and its life an active and out-of-door one, it can assimilate more and stronger food than if, from variations in climate and other causes, it leads a more quiet life ; and if for any reason its digestion is not up to its normal standard, consideration must be given particularly to quantity. It must be remembered that through repair eating is intended to balance, not to increase,

the waste caused by the constant action and change going on in the organs. This waste, if not fully counterbalanced, will soon cause suffering and illness, but the mistake so constantly met with of overfeeding must be absolutely avoided. A well-balanced diet must have the right ratio of protein, fats, and carbohydrates ; enough proteids (eggs, milk, meat, etc.) must be given for the building of tissue, and enough of the other constituents of food to give energy, to keep the body warm and to enable it to do its work. The amount of nutrition required in every instance must be carefully considered. One of the most important reasons for this is that energy must not be wasted in getting rid of superfluous material, as organic disease may result. A little food thoroughly digested is far better than much that is half digested.

It is always necessary to understand how to supply as nearly as possible the same materials that the body is regularly losing, as, for instance, when we give heat-forming food in cold weather and liquid in hot weather. Drink constitutes food as well as what we eat. As each nutritive ingredient serves its own peculiar purpose, it can readily be seen why it is necessary for a mother to understand something of the elements of food and their action.

She should also be able to detect immediate needs in individual cases, as, on account of proximity, she is generally the only one who notices the daily variations in conditions requiring daily modifications of diet. Whilst a mother need not actually cook the food required, she should know just what to select under certain conditions, and exactly how to have it prepared.

Further, she should not only be able to note by results that her directions have been carried out, but also be willing, if necessary, to see to it personally that this is done. A little supervision, judiciously applied, will frequently prevent difficulties that are likely to occur as a result of carelessness upon the part of servants.

She should understand the changes needed in health, illness, and intermediary stages. In illness, this knowledge would allow her ably to supplement the efforts of the physician, and in cases of slight indisposition she would frequently seize the opportunity for overcoming ailments which, uncared for, might prove serious. For instance, if she recognized the fact that the eliminative processes were hampered, she would cut down albuminoids: thus, in cases of constipation the supply of fruit, vegetables, cereals, etc., would be relatively greater in menus than that of milk, eggs, meat, etc. (proteids). Again, as the preparation, intervals, and amounts in feeding children are of equal importance, she would know that with ailing children she must feed more frequently and less at a time; that the food must be more daintily prepared and be more assimilable than that required in health; and she would, consequently, pay particular attention to these requirements. In cases of illness she would realize that success in treatment depends very largely upon the trouble taken in the combination and preparation of the foods that are allowable, so as to give as varied a diet as the necessary limitations will permit. Temperament would be considered, and tastes and likings consulted, all of which are of great importance in the digestion of food. Naturally following as a result of

such study, the fact would be discovered that more liquid food should be used than is common, and less solid. The giving of water is one of the most important features in infant feeding. Many conditions require it, and it is healthful at all times, unless in rare stages of illness, when it might be forbidden by medical authority. It is not unusual to deprive infants almost entirely of water because they drink milk. The fact is overlooked that milk, though a liquid out of the body, becomes in the stomach a solid food containing all the nutriment required for an infant's normal growth. Irregular action of natural laws is not infrequently a result of this deprivation, and can easily be corrected by the use of what appears to many to be an excess of water.

Among the uneducated, strong in the old theory of teething being the necessary cause, it is a very common custom to look tolerantly upon serious infantile ailments. "Errors in diet, and consequent disorders of digestion, which frequently give rise to violent convulsions in infancy, would occur less frequently if," as has been aptly said by a physician, "for 'teething' we would read 'stomach and feeding,' and if we would always consider whether these are at fault, we might, although proving disagreeable and troublesome at times to the mothers and nurses, do more good to the suffering infants."

If food is not such as the digestion can master, it is useless and can only do harm. Not being turned to proper account, the blood receives no new supply, and is impoverished; there is no nourishment given for development of body, and inherited tendencies to various

diseases are encouraged by those whose duty it is to provide food of nutritious quality and to see that it is carefully administered. Many of the diseases to which children are liable would disappear under strict supervision of hygiene and diet, especially the various intestinal disorders, including many resultant throat, catarrhal, and nervous troubles. Nature resents carelessness, and is relentless in her punishments. What the doctor calls cholera infantum, rickets, or marasmus, etc., and the mother is inclined to consider a dispensation of Providence, is only too frequently the direct result of violations of the most common laws of domestic science.

This problem is always before the physician. Food and hygiene have entered so largely into the study of medicine that preventive medicine has become one of the features of the day, and departments for this study have been, and are being, opened in the most prominent universities in all countries. The truly successful physician is he who carefully studies the chemical properties of different foods and their application, and who not only understands but makes use of this knowledge in his practice. Much of his effort may be wasted, however, owing to lack of knowledge upon the part of those directly interested. Directions may be given with precision, but the untrained mother or nurse will frequently err by not carrying out instructions exactly as given, and thus often retard the recovery and possibly endanger the life of the patient.

The whole study of nursery dietetics appears to be a vast one, yet it resolves itself into a few simple and generally acknowledged facts. For an infant, whatever

is given as a substitute must resemble its natural food as closely as possible. That this can be done has been shown by expert analyses, and this fact is conceded by all leading specialists upon the subject.

A legal enactment in France prohibits the giving of any form of solid food to infants under one year of age without the authority of a prescription from a qualified medical man. The employment of the rubber tube for nursing-bottles is also forbidden, as it is almost impossible to keep it clean. The passage of this law is due in great measure to the efforts of the Society for the Protection of Children, of which Dr. Rouchard is founder. The United States Department of Agriculture at Washington has also taken up the matter of infant foods in connection with reports upon tuberculosis. A circular is issued by this department, giving simple directions for the treatment by heat necessary to make milk a safe food for infants. The establishment in Boston, in 1891, and later in New York and Philadelphia, of the Walker-Gordon Milk Laboratories, opened a new field in the province of infant feeding, and results, as stated elsewhere, show conclusively the advantages that have been gained thus far. These and similar movements are important and practical, and they should fully demonstrate to the thinking mother the necessity for her study in this direction.

Following infancy comes the more difficult period of childhood, although not usually considered so, when necessary supplies of nutriment must be furnished to repair the constant waste caused by the active growth of the child. It frequently happens that a plump,

vigorous-looking infant develops into a thin, unhealthy-looking child. It is at this time that the constituents of various foods for practical results should be thoroughly understood, the amounts necessary for various periods should be comprehended, and methods of administration and preparation should be closely studied. No amount of general knowledge will be of service at this period; special study is required. The laws of heat and change of tissue by applied heat must be learned. The proper proportion of albuminoids, salts, starches, and sugar must be considered under different conditions. The relation of fat to food as an aid to digestion, under what conditions to use it, and in what form and quantity to apply it, whether as cream or butter, olive or cod-liver oil, must all be carefully studied. In selecting the food for a growing child special diet lists must be consulted, and they must be reliable. It is in this connection principally that the mother will find of value her knowledge of the chemistry of foods, the science that tells us what things are made of, and how their elements combine with others to produce certain fixed results. Knowing the chemical composition of foods, she can use her knowledge to provide palatable dishes with no loss of nutrient. Indeed, possessing the elementary knowledge only, she can economize time, labor, and money.

Constant suggestion in this field may prove of untold value when sufficiently practical to guide the mother in her selection of menus from lists of foods that have been dietetically considered and given as suitable for the requirements of a child in average health and condition. Foods that are especially suita-

ble for various forms of illness should be included in these lists, and recipes allowed should be only those that have been tried and found advisable, considered in every way, from a practical as well as a dietetic point of view. Such specific knowledge, if thoroughly comprehended and followed with intelligence, would aid physicians materially in their efforts to lay for children a firm foundation for the future.

Following the period of childhood comes the time for the study of estimating correct quantities and proper selections of food to be used in regulating the diet suited to the individual needs of girls and boys approaching maturity, the excesses to be avoided by those of sedentary habits, and questions of similar import.

Relative to this whole subject Sir Henry Thompson, a noted English physician, and an authority upon dietetics, says, "I have come to the conclusion that more than half the disease which embitters the middle and latter half of life is due to avoidable errors in diet (to which might be added, 'more particularly in early years'), . . . and that more mischief in the form of actual disease, of impaired vigor, and of shortened life accrues to civilized man . . . from erroneous habits of eating than from the habitual use of alcoholic drink, considerable as I know that evil to be."

General knowledge is of very little use in this study beyond directing attention to the need existing for special knowledge. What appears to be one of the most practical phases of this many-sided subject is that this special knowledge must be supplied to

mothers by scientists, by physicians, and by those among the laity who are sufficiently interested in the subject to assist by giving data secured through personal experience. The science of household affairs must be understood if reform is to be looked for. Endowments must be made to enable scientists to make researches of the highest order. Simplified results may then be given to the public in such a manner that they will be assimilable and readily comprehended by the average intellect. Schools, public and private, should not overlook the importance of this study. Then all mothers and home-makers in the land, those indirect nation-makers, will easily come to understand the underlying principles involved, and will apply this knowledge in such a way as to benefit all who are dependent upon their efforts. Herbert Spencer says, "Perhaps nothing will so much hasten the time when body and mind will both be adequately cared for as a diffusion of the belief that the preservation of health is a duty. Few seem conscious that there is such a thing as physical morality. Men's habitual words and acts imply that they are at liberty to treat their bodies as they please. The fact is, all breaches of the law of health are physical sins. When this is generally seen, then, and perhaps not till then, will the physical training of the young receive all the attention it deserves."

CHAPTER II.

Infant Feeding.

Natural Feeding—Food for Mothers—Wet-Nurse—Substitute Feeding
—Modification of Milk—Purpose of Milk Laboratories—Weaning.

T. M. ROTCH, M.D., of Boston, Professor of Diseases of Children at Harvard University, President of the Pediatric Society, etc., says, “Just as the highest aim of medical art should be directed to the province of preventive medicine, so the highest and most practical branch of preventive medicine should consist of the study of the best means for starting young human beings in life. . . . It is a proper or an improper nutrient which makes or mars the perfection of the coming generation. . . . We should be guided by what nature has taught us throughout many ages in studying the form of nutrient suitable for an especial period of life.” Because of Dr. Rotch’s high standing and vast experience, his statements command recognition everywhere, and such of his most recently expressed views as are likely to be of interest to those in charge of children are embodied in the present chapter.

The superiority of human milk to all other kinds of infant food is universally acknowledged. Dr. Rotch has divided the nutrition of young human beings into three distinct nutritive periods, corresponding to the stages of their development. The first period consists of the first ten or twelve months of life, and it is at this

time that human milk must be considered. Mother's milk, when of good quality, which must be determined by results, is conceded by all to be the most desirable food for infants. The younger the infant the more important the breast nursing, as it is extremely difficult to prepare a food that will agree at this age. Every effort should be made to nurse a child for at least three or four months. A large number of infants are deprived unnecessarily of their natural food. As knowledge increases this will, undoubtedly, occur less frequently. Mothers do not err usually from lack of feeling, but from want of knowledge as to ways and means. In no respect is there seen more lamentable ignorance, and maybe carelessness, than in this direction. Mothers rarely know the conditions requisite for the satisfactory nursing of a child. To nurse a child normally, a mother should be strong and healthy, of an even, happy temperament, desirous of nursing her infant, and she should have time to devote herself to this special duty during the whole period of her lactation. She should have a sufficient supply of milk, and should be willing to regulate her diet, her exercise, and her sleep according to the rules which will best fit her for her task. These may be said to be the ideal conditions for the nursing of an infant. It is true that women who are far from vigorous nurse their infants with seemingly good results, and that a frail, delicate-looking mother may have an abundant supply of good milk. These are exceptions, however, which make the principles just stated all the more true. Emotional mothers do not make good nurses. With few exceptions, the mothers who have uncon-

trollable temperaments, who are unhappy, who are unwilling to nurse their infants, who are hurried in the details of their life, who are irregular in their periods of rest and in their diet and exercise, are unfit to act as the source of food-supply for their infants. Even if their milk happens to be sufficient in quantity, it will probably be so changeable in quality as to be a source of discomfort, and even of danger, rather than the best nutriment for their offspring. The influence of emotion on mother's milk is very great: in some cases it acts as a direct poison. It is far better for such mothers not to attempt to nurse if they cannot regulate their lives, but to adopt some other method of feeding. It is of still greater importance that mothers who are suffering from some chronic disease, or one which their infants may directly inherit, should give up all thought of nursing. A nursing diet should not include too much meat and solid food; an abundant light diet should be given at first,—milk gruels, soups, vegetables, bread and butter, and after the first week a small amount of meat once a day. Increase the diet with exercise, using plain but nutritious foods, taking regular meals, and frequently additional ones of milk, cocoa, etc. Use no stimulants; malt extracts are useful; drink milk at night. The food of a nursing woman is closely connected with that of her infant. Idiosyncrasies must be looked for, and if certain articles disagree with certain women, and consequently with their children, they should be omitted from their dietaries, but they need not be forbidden to all women on this account.

“For the average woman, a plain mixed diet, with

a moderate excess of fluids and proteids over what she is normally accustomed to, will, as a rule, give the best results." (Rotch.)

Exercise is important in regulating the constituents of human milk. It is to be taken according to the strength of the woman in question. A walk of one or two miles daily, or an equal amount of similar exertion, is necessary in almost all instances to reduce the proteids in human milk to the proper proportion. Mothers frequently wonder why their children have colic, when the reason is to be found in their own sedentary lives. This is very well illustrated in a case cited by Dr. Rotch, of an infant that was being nursed by its mother, who was healthy, and who had an abundance of breast-milk. The infant during the first two months of its life nursed well, throve, and was perfectly quiescent in its daily life. When it was three months old the mother was very much worried by some trivial family matters, and did not take much exercise. The infant now began to have colic, and, although it gained in weight, it was very restless, and cried continuously. The indications for treatment, as shown by an analysis of the mother's milk, were to lessen the amount of mental disturbance in the mother and to make her exercise more. The mother followed directions, and the infant improved. After a few days the unfavorable symptoms returned, and it was found that the mother had not been exercising, and was again mentally disturbed. Suitably modified laboratory milk, containing a very much smaller percentage of proteids than the analysis of the mother's milk showed, was then used, and the child digested the food

perfectly, had no colic, and gained in weight. Later, a change to a wet-nurse was made, with ensuing difficulty, as her milk had too high a percentage of proteids. The child became ill, lost weight, and its bowels were affected. At last the mother decided to return to the use of the laboratory milk, which was given low in proteids; in twenty-four hours improvement was marked, and from that time on gain was steadily made. This is only one of the many interesting accounts of the work being done by physicians with the aid of milk laboratories.

Mother's milk may vary in quality and quantity. Frequent analyses should be made; this can be done by any physician, approximately, by the use of the method devised by Dr. Holt. The apparatus is inexpensive and of assistance to those physicians who are endeavoring to solve the problem of infant feeding, but who may be beyond the reach of laboratories and the opportunities afforded in large cities. It is of the utmost importance for any nursing mother to have an analysis made of her milk when the child is thriving, that in the event of her sudden death, illness, or absence the same constituents of food may be provided, thus avoiding all risk of illness to the child from a change to an unsuitable substitute food. It should be the duty of every family physician to see that this is done.

Human milk may be considered as representing a combination of foods. Experience shows that the digestive capabilities of infants differ just as do those of adults, and that nature provides a number of varieties of good human milk adapted to the various idiosyncrasies of infants.

“Young animals at birth begin to receive their nourishment immediately, and a corresponding increase in their weight takes place from the first day of life. The human infant, in like manner, should begin with its nursing early, getting what it can from the breast until the full supply of milk has come. In this way it will not be likely to have a large initial loss of weight to regain. . . . Every hour, every day, is of the utmost importance in the early days of life, and, provided it can be done without detriment to the condition of the mother, the sooner the infant is put to the breast the better. If, during the first two or three days of life, it is restless and evidently hungry, on account of the mother’s inability to supply milk, one to two drachms of a five per cent. milk-sugar solution, made by dissolving milk-sugar in sterilized water, should be given at intervals of two or three hours.” If the mother’s milk is delayed still longer, something additional must be given to the infant, and if the food cannot be obtained from a milk laboratory, the proportions for home preparation should be exactly specified by the physician in charge.

The intervals constitute a very important part of the management of breast feeding where the quantity is regulated by the breast itself. They should be definitely stated to the mother at different times throughout the nursing period, and should be adhered to. The table given by Dr. Rotch as an average rule, with the caution that the intervals of feeding be made to correspond to the stage of development of the individual, is as follows :

The day feedings are supposed to begin with the 6 A.M. feeding and to end with the 10 P.M. feeding.

Age.	Intervals.	Number of Feedings in 24 Hours.	Number of Night Feedings.
From birth to 4 weeks	2 hours	10	1
From 4 to 6 weeks	2 hours	9	1
From 6 to 8 weeks	2½ hours	8	1
From 2 to 4 months	2½ hours	7	0
From 4 to 10 months	3 hours	6	0
From 10 to 12 months	3 hours	5	0

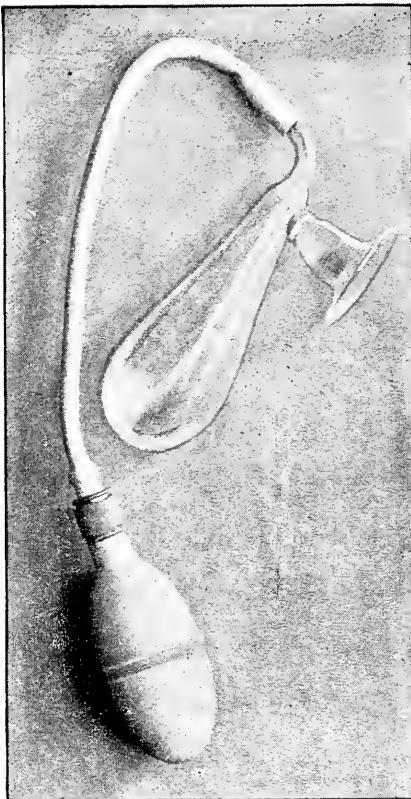
Note that night feedings are omitted at two to four months. The mother may thus have continuous sleep at night and get the rest necessary for conditions requiring it. Too frequent nursing renders milk too solid, lessens the water, and gives the child colic; too long intervals make the milk too watery to give nutrition. The importance of regularity at proper intervals cannot be overestimated for the comfort alike of mother and child. An infant should nurse about fifteen minutes; this will be found to be usually long enough to empty one breast, which should be sufficient for one feeding. A period of nursing longer than the usual fifteen or twenty minutes before the child is satisfied should make us suspicious that the milk is lacking in quantity, which can be determined by weighing the child before and after nursing, at different nursings in the day, before reaching conclusions. Increase of weight is the best evidence as to nutrition. Dr. Edward P. Davis says a child may gain by proper food from a half-ounce to an ounce daily for the first four or five months, and half the amount for the rest of the year. The appearance of

the stool is also an evidence of nutrition. In an infant it should be half solid, bright yellow, and free from partially digested milk.

In certain cases the mother's nipple is so small or depressed as to give trouble in nursing. Nipple shields will sometimes be of assistance. In cases of extreme pain a little patience for a few days will bridge the difficulty and prevent the loss of the child's greatest blessing. Bathing with cold water before and after nursing keeps the tissues in healthy condition. In cases where the child cannot obtain its food through a shield or from the breast from lack of suction power, the breast-pump becomes of value. The practical deductions to be drawn from known experiments demonstrate that in cases of illness of the mother or unavoidable absence from an infant the breast-pump may be used regularly to relieve the breast of the mother until such time as she may resume nursing, whilst the babe may be fed according to the analysis which the physician should have made beforehand and kept in readiness for reference under the possibility of just such circumstance arising.

Drugs must be used very carefully. Laxative medicines will frequently affect a child, and they should always be given with caution. Dr. Rotch speaks of one instance of a mother's drinking porter every day, which caused her nursing child to vomit for weeks. She stopped taking it, and the vomiting of the infant ceased.

The return of menstruation does not necessarily indicate that there should be cessation of nursing. The only disturbance which is likely to arise is a slight



Breast-pump.

attack of indigestion, which will in all probability disappear under normal conditions in a day or two. If this is not the case and the milk appears to disturb the child's nutrition continuously, a physician should decide whether weaning is necessary.

Pregnancy is not compatible with nursing; hence weaning is imperative, but if a child is delicate or ill, it must not be done suddenly. Five or six weeks should be taken to do it, using modified milk prepared according to an analysis of the mother's milk that should have been made before the disturbance arose.

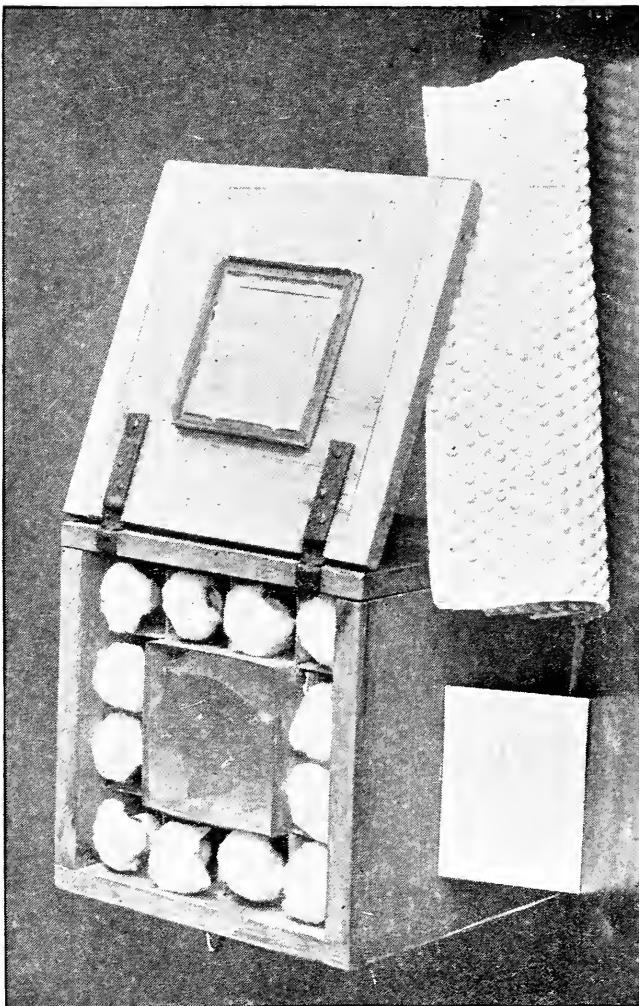
If at any time the mother's milk seems insufficient, it may be supplemented with properly modified milk by one or two feedings a day at any age, from six weeks up, if necessary. So long as a child gains in weight, nursing may be continued up to eight or ten months, according to the season of the year; if, however, the child does not gain, substitute feeding may be used at any age, but the substitute food must be made to resemble the mother's milk as closely as possible. If teething is delayed, it is an evidence of poor breast-milk, and substitute feeding should then be begun. A well-nourished child should grow about eight inches the first year (or nearly three-quarters of an inch every month) and four inches the second year (not quite half an inch a month). An infant should double its weight in six months, and treble it in a year. It should be weighed and measured monthly. If it does not increase at the rate of about one pound a month the first year, and about twelve ounces a month the second, it is advisable to see to its nutrition, which will, in all probability, be found to be at fault. A

nurse should cease nursing if these conditions are not present. Premature children should increase in the same ratio.

The employment of a wet-nurse requires careful consideration, and should be done under a physician's advice only. All the points which have been referred to for successful maternal nursing are of equal significance in the case of a wet-nurse. For many reasons, such as expense, difficulty in securing one whose milk will agree, hereditary taint, ungovernable temper, etc., this method of feeding is usually out of the question; hence indirect substitute feeding must be instituted in the majority of cases. If a wet-nurse is employed, her diet and habit of life should remain as nearly as possible like what she has been accustomed to.

Under all circumstances, even if a mother is healthy and the milk good, by the end of the first year weaning should have been accomplished. Unmodified cow's milk and starch in some form are much better adapted to the child at this time, and should be substituted for mother's milk. If a child has been properly weaned, it can easily digest them at this age. The presence of six or eight incisor teeth allows a change to be made in the food, and the use of starchy foods follows, but it is usual for children to be unable to digest these foods to any extent until the last two or three months of the first year. The period of nursing may be shortened or lengthened by a month or two, according to the season of the year, the coming of the teeth, or the condition of the child from illness or convalescence. Under such circumstances it may be wiser to feed the infant from the breast during summer, and to wean it

in cool weather, before or after the hot season, according to the individual case. It is also preferable to wean when the child is not cutting teeth, as disturbances may arise. Sudden weaning should never occur ; sufficient time should be taken, and the food substituted must be gradually given. If home modification of milk is depended upon, give one bottle in place of a nursing for a few days, watching the child carefully to see if the new food agrees ; then two bottle feedings, replacing two nursings, preferably one in the morning and one in the afternoon ; after a few days three ; and so on until every meal is given from the bottle. If the milk is properly modified, weaning should be a very simple matter in ordinary cases. Dr. Rotch says the method he finds safest and best is used in connection with the milk laboratory. If an infant is thriving upon its mother's milk, he has the milk analyzed, and sends for the same percentage of the elements in the substitute food to be used. After using this for a few days, if he finds the milk agreeing with the infant, he changes the constituents gradually, with the object of gradually combining these percentages in such a way as to correspond to the percentages of the elements of unmodified cow's milk. He shows how this is easily and precisely accomplished, and fully explains the use of milk laboratories where such exact methods are followed. At the tenth or eleventh month, before the breast-milk has been entirely withdrawn, starch in some form, as advised by the physician, should be added to the milk, and, if it agrees, the breast can be altogether replaced by substitute feeding.



Ice-box, holding twelve tubes. Receptacle for ice in centre of box. Laboratory prescription-blank in front of box, and packing-paper under end of open lid.

who knows, instead of presuming to know it all herself.

Too much stress cannot be laid upon the necessity in infant feeding for mothers to consult physicians in regard to substitute feeding, and all important changes to be made, and equally upon a strict following to the letter of all directions given, not relying too implicitly upon others for supervision where personal attention is necessary. If this be done, the physician will be aided, not hindered, as he now so frequently is, in his efforts to reduce infant mortality and increase the strength of those who survive.

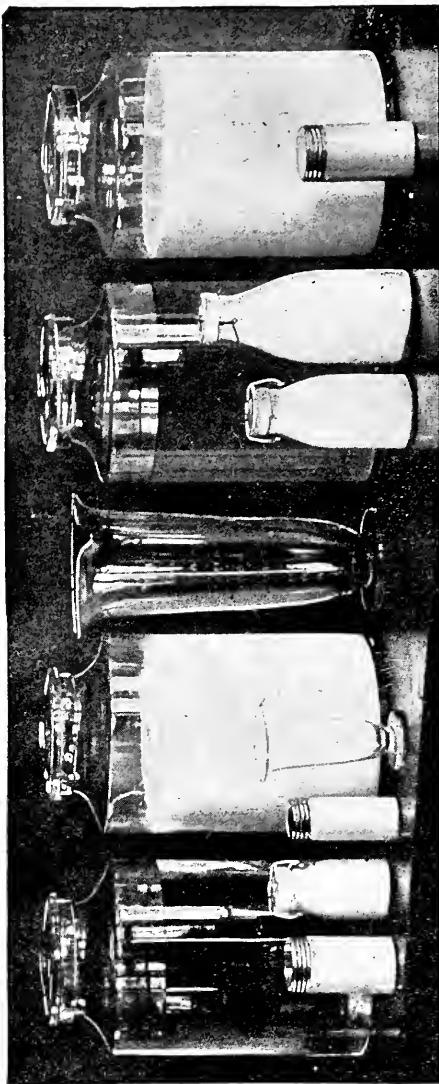
Proprietary artificial foods are entirely unnecessary when cow's milk and cereals may, with the requisite knowledge, be prepared at home. They are a useless expense for older children, unsuitable for infants, and altogether the weight of opinion is against their use.

If in weaning a child the laboratory method or home modification cannot be followed, on account of careless servants, nurses, etc., the Fairchild process will be found satisfactory at any age or season, one bottle taking the place of a nursing at first, two in a few days, and so on. For infants hand-fed from the first, in cases where a physician or laboratory methods are not available, this process should be tried before resorting to the mixtures advised on labels and advertising pages as "the only food for infants," or "just like mother's milk," etc.

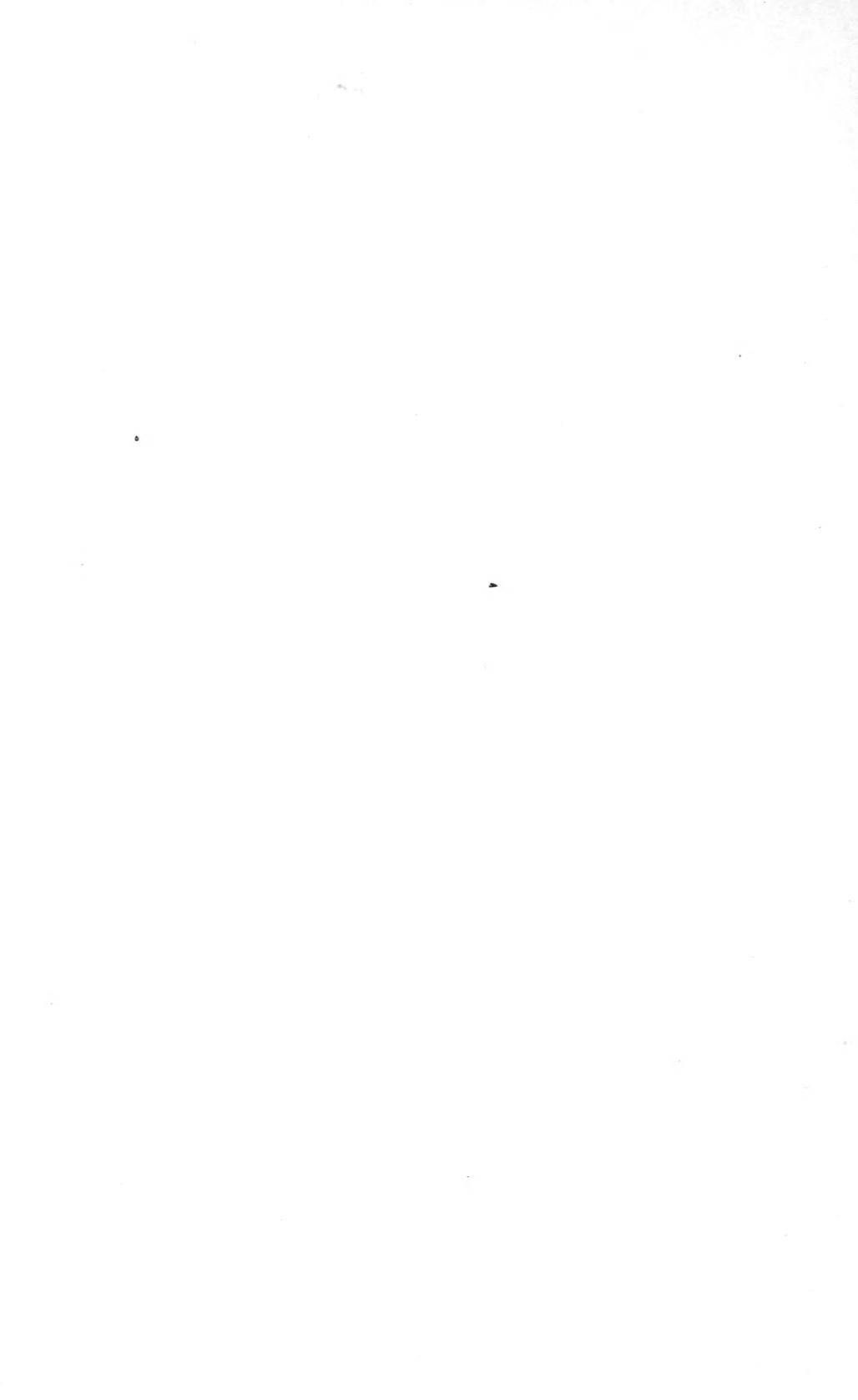
Ideal weaning should be completed at twelve months if gradually done. If, on account of illness of the mother, or for any other imperative reason, it must be done in summer, the process mentioned above will, in

all probability, meet all requirements if a physician's advice cannot be had. After the change from breast-milk has been entirely made to modified milk, the advance to clear milk must be graduated with equal care by substituting one bottle only in place of the modified milk, in a week another, and so on; then when the change is completely made, cereal foods must be used just as gradually, the undiluted milk being kept for the base of the child's food throughout the second year, as indicated elsewhere.

The fat necessary for an infant's food is in the cream. Constipation is a frequent result of lack of fat in both nursing infants and those fed by substitute feeding. A nursing mother may correct such constipation by eating more meat and taking more exercise. A bottle-fed baby needs more fat (cream) in its food. Condensed milk and malted milk are both lacking in fat, and when children are said to thrive upon these foods it will usually be found upon investigation that cream has been added. I remember one instance in which this was particularly noticeable, as the child's parents told me, in refutation of my statement that modified cow's milk was best, of the exceptional weight and condition of their child, who had, as they said, been fed altogether upon condensed milk. Upon close questioning I discovered that cream had been used generously, which explained to me very satisfactorily the causes at work in this instance. The test of a child's condition does not always reveal itself upon casual observation. The true test is shown in its resistance to the various forms of disease so generally supposed to be children's necessary ailments. Many



Modifying materials.



of them result from carelessness, and are called children's diseases only because at this period of slight resistance the greatest amount of ignorance and carelessness is usually displayed, with consequent disaster to the little ones. As the knowledge of hygiene and dietetics in the nursery becomes more general, the infant's chances of life will outweigh those of death.

Some modification of cow's milk is necessary for substitute feeding. It is the universal source of supply for this purpose, and, as Dr. Rotch says, the various foods used are merely adjuvants of cow's milk, which does away with much misapprehension concerning the apparently successful results of innumerable foods. What he says further upon this subject might be studied with profit by every one interested in the welfare of children :

“ It would seem hardly necessary to suggest that the proper authority for establishing rules for substitute feeding should emanate from the medical profession, and not from non-medical capitalists. Yet, when we study the history of artificial feeding as it is represented all over the world, the position which the family physician occupies, in comparison with that of the venders of the numberless patent and proprietary artificial foods administered by the nurses, is a humiliating one, and should no longer be tolerated.

“ If we are abreast of the times, if we but recognize and do justice to the work which has lately been done by our own profession, we surely will not hesitate to relegate to oblivion the statements of the food proprietors, which on box and can, on bottle and printed circu-

lar, attempt to stem the slow but inevitably progressing wave of scientific investigation.

“It may be well to bear in mind that the attempts which in the past have been made to manufacture cheap foods have been markedly failures. We must first, regardless of expense, learn to produce by modification a perfected substitute food, and not endanger the success of our undertaking by allowing the mercantile side of the question to cripple us in the use of costly methods, which, however, we know to be the best. We should, in fact, remember that the human milk, which we are endeavoring to copy, far from being a cheap product, is a very expensive one.

“My own opinion in regard to patent foods, as a whole, is that they must necessarily be unreliable. They are thrown on a market where the competition is extreme, and when once they have been advertised into public notice I cannot but feel that irregularities and changes—slight, perhaps, in the eyes of the makers—may unintentionally creep in and carry their composition still further from that of the standard, human milk.

“Analyses show that there is a lack of uniformity in these foods from year to year, and that original claims are apparently forgotten or allowed to give way to cheaper production. In fact, as my experience in the feeding of infants increases, and as I examine year by year the effects of the different foods on infants, I am strongly impressed with the belief that with our present physiological, chemical, and clinical knowledge all the patent foods are entirely unnecessary. The claims made for them are not supported by intelligent and unprejudiced investigation. Those who

manufacture them are not in a position to judge correctly concerning them. The merit at times of their apparent success does not belong to them, but to accompanying circumstances. They do great harm by impressing upon the public the false idea that a cheap, easily prepared food is for the good of the infant and is better than anything that can be procured elsewhere. They vary too greatly in their analyses to keep even within the acknowledged varying limits of human milk. It is therefore high time for physicians to appreciate exactly how inefficient in themselves and how misleading in their claims are these artificial foods, and also in what a false position, as the protector and adviser to the public, our profession is placed whenever it lends itself to even a toleration of their use. I speak of them here simply because there is no doubt that they are kept in the market by the physician rather than by the manufacturer. The latter is only doing what any capitalist interested in a business venture would do. The former, it seems to me, is, perhaps unintentionally, aiding the business interests of others at the expense of his own future reputation as a scientist. It makes little difference to physicians as to what is claimed for these foods when they are placed in the market. It makes a great difference what the mixture contains when given by the mother to the infant according to the directions on the label. For instance, a food may show by its published and certified analysis a fair percentage of fat or sugar, and yet this same food when diluted for the infant's feeding may have these constituents reduced far below the reasonable limits of nutrition."

It is not generally known that every year in the United States alone thousands of children die for want of care in the preparation and administration of their food. Until within the past few years very little attention was given to the purity of milk or to the possibility of keeping it sweet for any length of time. Infected milk is one of the chief sources of contagion in consumption, scarlet fever, diphtheria, and kindred diseases. The application of sufficient heat (167° F.) to kill the germs which are dangerous to the child without destroying the quality of the milk as a food, is the only practical way known of preventing contagion and keeping milk sweet for the time required in infant feeding. The proper care of milk demands purity of source, cleanliness in handling, and quick and careful transportation. Failing these, the application of heat is the only safeguard left to the mother to protect her child. Statistics show that in hospitals where this method has been introduced the death-rate of children, particularly of infants, has wonderfully decreased. This is not surprising when one hears that a single microbe, like the hay bacillus, found in all stables, is so prolific that at the end of twenty-four hours its descendants will be more than ten billions in number. This fact alone shows one immense advantage to be gained by the application of a sufficient degree of heat to kill all dangerous germs. The fact is generally conceded that pure milk will prevent much infant disease and mortality, and bacteriologists have fully demonstrated the necessity for this process by showing that milk is rarely pure. Dr. Chapin says that in six hundred infants whose

cases were studied, nearly all the troubles were acquired and not hereditary. "While a tendency to constitutional disease may be inherited, it is the bad surroundings and the faulty conditions of life that powerfully predispose to illness," the chief sources of difficulty being poverty and ignorance. He says the waste of child-life in densely populated centres, especially in New York, is enormous. In the year 1893 the bodies of three thousand and forty-two children under five years of age were received at the morgue, and nearly all were buried in Potter's Field, killed by poverty and ignorance, want of proper diet and care. In France, out of two hundred and fifty thousand infants that die annually, one hundred thousand might be saved by careful nursing, says M. Rouchard, President of the Society for the Protection of Children. This knowledge caused the passage of the bill forbidding the use of solid food for infants under one year of age, unless advised by a physician. A few facts like these will show to the educated and thoughtful woman why this particular branch of knowledge should spread until its influence takes effect in a marked degree upon the health of the children of the poor in large cities, who now have to struggle as best they can against sour milk, heat, dust, tenement-life, and all the evils and discomforts that attend the very poor, absence of cleanliness being generally the greatest evil. Those engaged in visiting the poor in cities where ignorance reigns supreme, reveal pitiful cases of poverty, carelessness, and ignorance. Baby's milk is left uncovered all day long in the stifling atmosphere of one living-room, or is placed with other food in a sink, which

becomes the refrigerator for those who cannot afford ice, and here absorbs germs by the million.

The underlying truth of all the past and present agitation concerning the purity of the milk-supply and the problem of substitute infant feeding is that both have been sadly neglected for many years, with the pitiful result of a vast amount of suffering and many premature deaths of children from one to five years of age, especially during the hot summer months, when it is so difficult not only to secure a pure supply, but also to protect the milk upon which these little ones depend. Comparatively few people stop to consider how quickly dangerous changes take place in this important article of food, and how readily it becomes contaminated by absorption of various volatile substances. This is particularly true of those who have the immediate charge of milk. It is appalling to any one understanding the subject and its bearings to see the carelessness that is frequently displayed by the milkmen, maids, and nurses, all of whom play so important a part in infant dietetics. Is it any wonder that philanthropists, scientists, and physicians have combined in solicitous effort to provide a pure supply of milk and to show how it should be properly administered to save helpless and suffering infants? The subject is of infinite importance, and the truths concerning it should be iterated and reiterated until satisfactory evidence has been given that persistence has been of some avail in changing existing conditions that are a reproach to our people and a menace to our health as a nation. Medical science has made important and rapid progress in this direction, as is evidenced by the work

done by Drs. Rotch, Jacobi, Holt, and many others, and by the establishment of milk laboratories where a child's food may be called for by prescription and be prepared with the same care as is ordinarily supposed necessary for medicines only.

A brief outline of the work possible to be done with the assistance of these laboratories is as follows: the cows supplying the milk receive the care required to provide as pure a milk as it is possible to procure; the milk is properly handled and cared for; the cream is separated from the milk by a separator specially adapted to the purpose; other ingredients, such as cereal jellies, lime water, boiled water, etc., required for the modification of milk, are held in readiness, and all the materials used are clean, sterile, and exact in their percentages; the physician making use of laboratory methods calls for certain percentages of foods required in the especial case he has in charge; the milk modifier simply follows directions. Dr. Rotch says, "An opportunity has for the first time in the history of medicine been presented for the physician to carry out his own methods, for the first time to be judged on a fair basis. In this way only can each clinical observer, when lacking in success, be sure that it is the fault of the food he is giving, and not because the food has varied from what he supposed he had ordered."

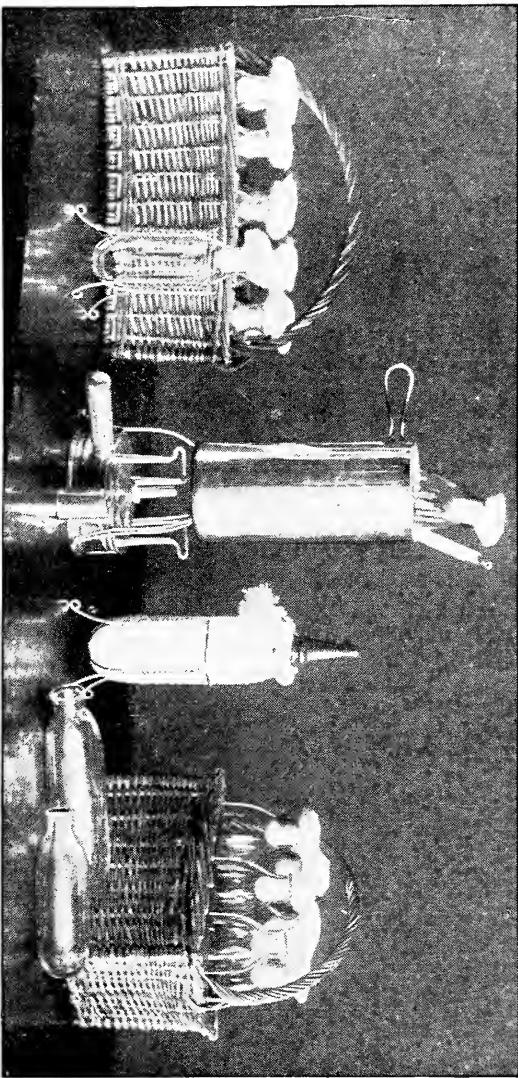
Each day's feeding of each individual infant is recorded. During the last three years Dr. Rotch has been able to test the value of this method by the feeding of nearly three thousand infants, and his data in the practical use of this system have been gathered by about four hundred physicians. He says he believes

a new era has been entered upon in the province of infant feeding which will enable physicians to produce results that have never before been obtained.

The first milk laboratory for the exact modification of milk that has been established in the world is the one that was opened to the public in 1891 in Boston under the name of the Walker-Gordon Laboratory. Since that time New York has had one, and one is now being established in Philadelphia.

For those who are beyond the reach of these laboratories, except by correspondence, Dr. Rotch, in conjunction with Mr. Gordon, has formulated a plan for the modification of milk at home.

If mothers will study this plan practically they may materially aid physicians who are away from laboratories in arranging a substitute food that will be likely to agree with the infant in question. It would be a very simple matter for any mother (relying upon her family physician for assistance in regulating ingredients) to follow these directions, if only in a general way, with advantage to her child, as they are based upon purity of source and handling of an infant's food, and caution and exactness in preparing, administering, and changing from one kind of food to another. Dr. Jacobi says a good food for a baby does not mean one which simply does not kill. It is one which permits a child to grow up healthy and strong. To perfect a substitute food exactness is required. This is made possible by laboratory methods. The apparatus required for home modification can be procured from the original laboratory in Boston, or from those in New York and Philadelphia. It consists of a home steril-



In the left of the picture is a basket holding eight tubes of a capacity of six ounces each. In front of this basket is a four-ounce tube in a wire stand. In the middle of the picture is a tin apparatus for warming the milk at the time of feeding. An alcohol lamp is shown beneath the warmer, and a tube of milk and a thermometer for testing the temperature of the milk are in the tin-warmer. Next to and to the right of the tin-warmer is a tube with a capacity of eight ounces. It is enclosed in a white worsted cozy, has the rubber nipple in place, and is supported in a wire stand. In the right of the picture is a basket containing six tubes with a capacity of eight ounces each. In front of this basket are an eight-ounce tube and a four-ounce tube.

izer, a thermometer to indicate the heat within the can, tubes for the milk, a roll of aseptic, non-absorbent cotton for stoppers, a cozy, an $8\frac{1}{3}$ -ounce glass graduate divided into half-drachms, a milk-sugar measure, holding $3\frac{3}{8}$ drachms, which obviates the expense of having



Sugar-measure.

the milk-sugar put up in packages by the apothecary, and is sufficiently exact to regulate the sugar percentages in the mixtures likely to be directed by the physician (if preferred, one pound may be divided into thirty-five packages, one package to be used instead of a measureful), and, finally, a glass siphon, which is a very necessary adjunct in preparing an infant's food. "It should be a glass tube one-quarter to one-half inch in diameter, and it can be bent in a gas-flame. The end out of which the milk is to flow should be at least six inches longer than that which is to be inserted in the jar. To operate the siphon, fill with boiled water, close the longer end with the finger, invert the siphon, and place the shorter end in the milk (at the bottom of the jar). Then withdraw the finger, and the water, followed by the milk, will run out of the long arm of the siphon. Do not use the mouth to start the flow of the milk through the siphon under any circumstances." (Rotch.)

Every direction must be followed with care as to the minutest detail. Herd milk is preferable to that of

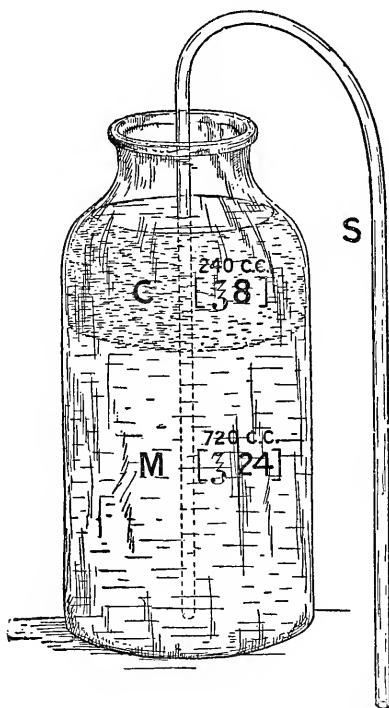
one cow ; the cows should be of common breed, and such as give a moderately rich milk ; the milk should be drawn with clean hands ; the udders and teats of the cows should be cleansed, and the cows should be milked in as clean a place as possible ; the milk should be thoroughly strained.

The milk should then be set in a vessel containing ice and water with some salt in the proportion of one teaspoonful to a quart of water, and the vessel be set in some clean place. A clean, freshly boiled cotton cloth is next to be thrown over the uncovered quart jar. The mouth of the jar is to be kept open for about fifteen minutes, to dispose of animal heat. The jar is then sealed tightly, as you would for preserving, and is left in the ice water for six hours, care being taken that the water does not fall below 1.66° C. (35° F.). City milk as delivered in jars is supposed to have gone through the cooling process, and if it must be used for children's food it should be siphoned, in the manner already described, after the cream has risen. It is possible in some cities—*i.e.*, New York, Boston, and Philadelphia—to secure milk, in limited quantity, that is only a few hours old ; this should be used in preference to ordinary city milk, which is usually twenty hours old by the time it reaches the consumer.

At the end of the time required for the rising of the cream, siphon out carefully from the bottom of the jar with the siphon described three-quarters of the milk into a clean glass vessel, leaving half a pint of cream containing ten per cent. of fat in the jar. You now have in a separate vessel the milk necessary for dilution, containing the proteids. Some clean drinking

water should then be boiled for five minutes, which, with some fresh lime water and the milk-sugar in packages or measure, prepares you for following your physician's advice as to percentages.

Inasmuch as every child requires different percentages in the same way that every adult needs food suited

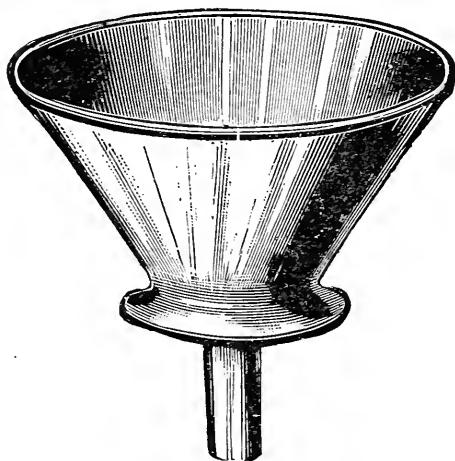


Jar containing milk, cream, and siphon. C, cream; M, milk; S, siphon.

to his capabilities in various directions, it is manifestly impossible to give a routine mixture, and this part of infant feeding should always devolve upon the family physician, who is much better able than the mother to decide as to the constituents required for various ages and conditions of health and illness. The above directions are given in the hope that mothers and others

of the laity who are in charge of children will realize the necessity of going hand in hand with physicians who are working faithfully to reach a safe basis for infant feeding. Mothers and nurses can aid materially in this work if they will only take the initiatory steps and make themselves competent assistants in work of this kind.

Dr. Seibert, of New York, has recommended a system of filtering through a thin layer of clean ab-



Dr. Seibert's funnel.

sorbent cotton, which plan is supposed partly to replace in families the centrifugal method of large milk establishments. A writer on this subject in the *New York Medical Journal* speaks of the gross filth that is removed by this process, and says, "It not only keeps dirt out of the nursing-bottle but also out of the alimentary canal of the infant, where, not being digestible, it is reinfected and can only do harm." It is said that the bacteria in milk are reduced in num-

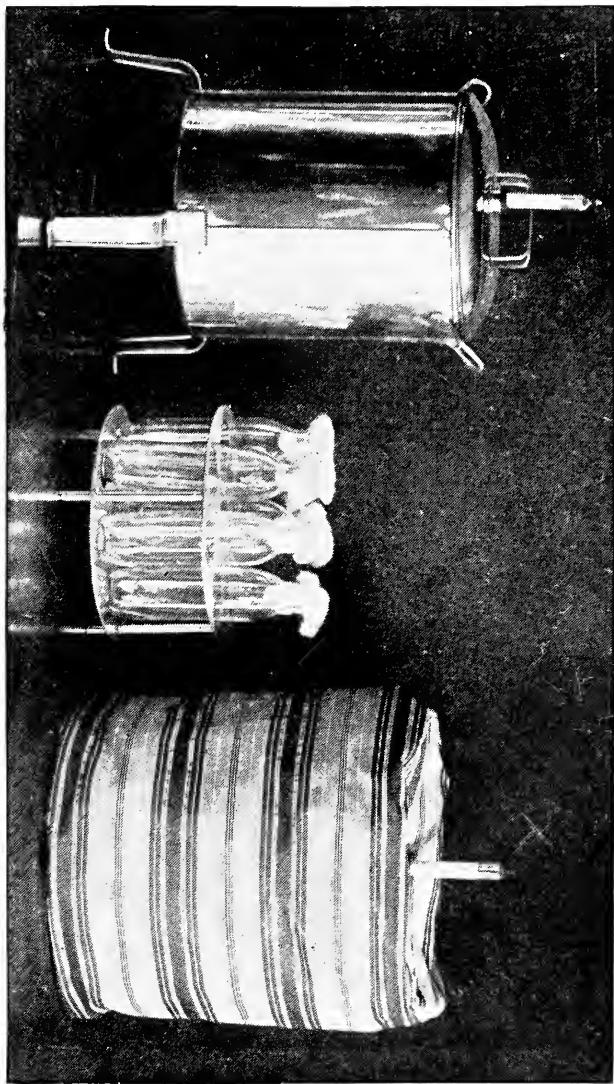
bers one-half by this method of filtering. Dr. Seibert has had made for the purpose carefully prepared cotton disks and funnels.

Taking it for granted that the above directions have been followed, and that the physician has given the formula required for immediate use in the case of whatever infant is being fed, the next point to be considered is the purity of the milk that is to be used. In some exceptional places, and under some exceptional circumstances, milk may be so well cared for as to be comparatively free from bacteria, and the cows may be known by test to be free from tuberculosis, but in the majority of instances this cannot be relied upon; hence the better plan is to heat the milk to 75° C. (167° F.), a temperature sufficiently high to kill those developed bacteria which would be of any harm to the digestion of the infant, and at the same time low enough to prevent changes that are now acknowledged by nearly all physicians to be undesirable in an infant's food,—changes that are caused by the temperature (212° F.) formerly advised for the destruction of germs existing in milk. The temperature of 75° C. (167° F.) allows the milk to remain practically fresh, uncooked, and sterile. The higher degree of 100° C. (212° F.) may be used in case of journeys, and when the milk, for unavoidable reasons, must be kept for a period longer than twenty-four hours; but for ordinary usage in the family this temperature need not be considered, unless under a physician's advice; as, for example, in cases of summer complaint in early infancy, when the higher temperature might be desirable. The degree of 167° F. may be applied to the entire mixture

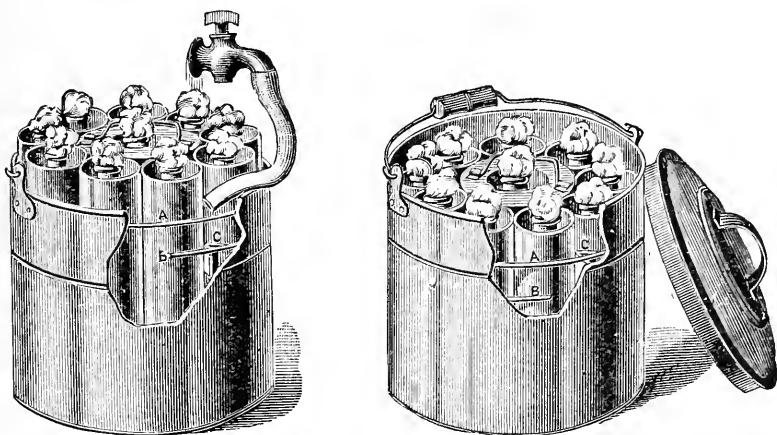
of ingredients called for, including the lime water, which is changed by the higher temperature of 212° F. ; hence, in the event of 212° F. being used, the lime water must be added to each feeding when it is given to the child.

There are various devices offered for the application of an exact degree of heat to milk, notably the Walker-Gordon laboratory sterilizer, the Arnold steamer, Dr. Freeman's pasteurizer, and one designed by Dr. Decker, of Kingston, New York. Exact directions are given with each, and any one of them may be readily procured by any druggist. The Walker-Gordon sterilizer is constructed upon scientific principles, and is to be used with a thermometer. Dr. Rotch's directions in "Pediatrics" for the use of this apparatus are as follows: "The requisite amount of food for one feeding is poured into each of the tubes. They are stoppled with cotton-wool, care being taken to have a reasonably tight stopple in and a dry neck to the tubes. The tubes are then placed in the rack and lowered into the sterilizer, and the water in the sterilizer is adjusted to the level of the milk in the tubes. Heat, by means of a lamp or stove, is then applied to the sterilizer, which is watched, with the cover off, until the thermometer shows that the water-bath has reached a point of 77.2° C. (171° F.). The lamp is removed as soon as this temperature is reached, the cover put in place, and the cozy over it. The thermometer should mark a temperature of between 75° C. (167° F.) and 77.6° C. (170° F.) for thirty minutes, at the expiration of which time the tubes are to be removed from the sterilizer and are to be kept in a cool place, preferably the ice-chest, until needed."

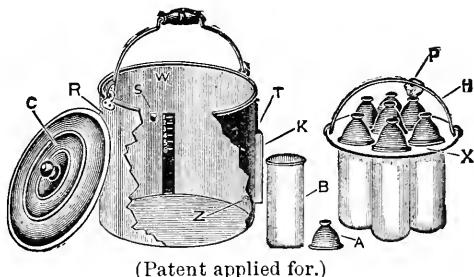
Sterilizer and thermometer. Stand for tubes. Sterilizer covered with cozy after removal from heat.



The Freeman pasteurizer was designed very accurately for household convenience by Rowland Godfrey



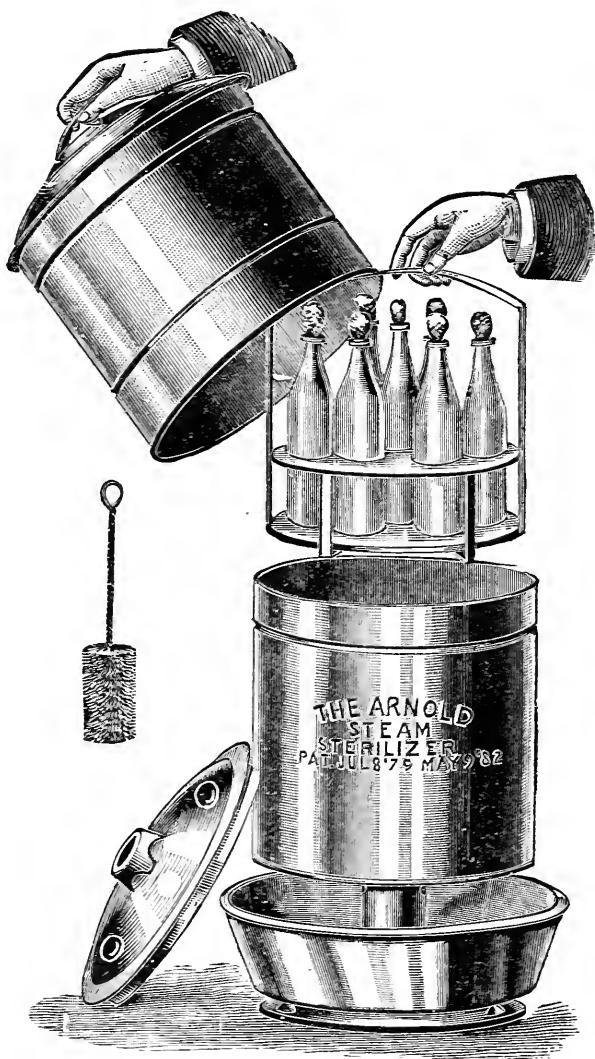
Freeman, M.D., of New York, and is said not to require the use of a thermometer, as a definite temperature of about 75° C. (167° F.) is reached by the process.



R, reservoir; C, cover; W, water-gauge; S, support for rack; T, thermometer; K, water-cup for thermometer; Z, water-tap; X, rack; H, handle; B, cell; A, sterilizing-cap for cell; P, the same corked with cotton.

The Hygeia sterilizer is arranged so that the thermometer can be watched without taking off the cover, and it is made to hold the bottles mentioned elsewhere.

The Arnold steamer has several improvements. It is to be used with a thermometer, through a perfora-



tion in the lid. A book of instructions is soon to be issued, which is said to give explicit directions for

reaching the required degree both with the old and the new style steamer.

The care of bottles, nipples, etc., is naturally an important part of infant feeding. The seamless nipples made in Philadelphia, and described by me some years ago in "Babyhood," are remarkably easy to keep clean. They are very smooth, carefully punctured (a very tiny hole being necessary, that the infant may not receive its food too fast), easily cleaned, and they never collapse. When clean and dry they should be kept in a covered box or dish, or wrapped up in a clean napkin, and just before using them they should be dipped in boiling water. This must not be omitted. The usual plan is to keep them in a tumbler of water containing soda, etc. I have tried both ways, and am convinced that the former method is preferable.

The "Hygeia" nursing device marks a step in advance in nursery bottles and nipples, as may readily be seen from the accompanying illustration. It was designed by a physician* to resemble in every possible respect the natural source of an infant's food, and the greatest evident advantages are the ease with which both tip and bottle may be cleansed, the doing away with both funnel and brush, the resemblance to the mother's breast (as a child frequently refuses the bottle, when being weaned, on account of the size of the



* William More Decker, M.D., Kingston, New York.

nipple), and the slow feeding resulting from the carefully punctured holes.

Milk-bottles can be thoroughly cleaned by rinsing first with cold water, then washing with hot soapsuds and a bottle-brush that is clean. The brush requires as much care as the bottles, a fact that is sometimes overlooked. Rinse the bottles, both inside and out, in an abundance of flowing clean water, preferably under the cold-water faucet, and examine each bottle carefully to see that there is no cloudiness or speck of milk remaining. They may then be placed in the rack and set in a moderately hot oven for an hour, when they will be sterile and ready for use, or they may be put over a fire in a boiler filled with cold water, to boil for half an hour, when they should be carefully drained and kept free from dust. Experiment will show that the oven method is preferable, as the bottles are dry and ready to be put away when removed from the oven. Care should be taken to cool the oven slightly by opening the door a few minutes before removing the hot bottles. This will prevent the cracking that might result upon sudden exposure to the colder air of the room.

After an infant has been fed, the empty or half-empty bottle of milk should not be allowed to stand for any length of time. It should be emptied directly, or as soon as possible, and be rinsed with cold water. It may then await a convenient time for washing the entire number used that day. A careful nursery-maid will, however, wash and heat the bottles as fast as they are emptied, which is decidedly the best plan. Physicians and fathers know, if no one else does, how

frequently the presence of a baby in the house insures the appearance at all times and in all places of half-empty or unclean-looking milk-bottles, which undoubtedly cause much of the illness usually ascribed either to the visitation of Providence or to a supposedly impure supply of milk. Careful observation will convince many that not one cause alone is the source of evils met with constantly in infant feeding.

The intervals in substitute feeding must be carefully considered. Dr. Rotch's table for intervals in breast-feeding (p. 25) applies equally to substitute feeding. His table for amounts is as follows :

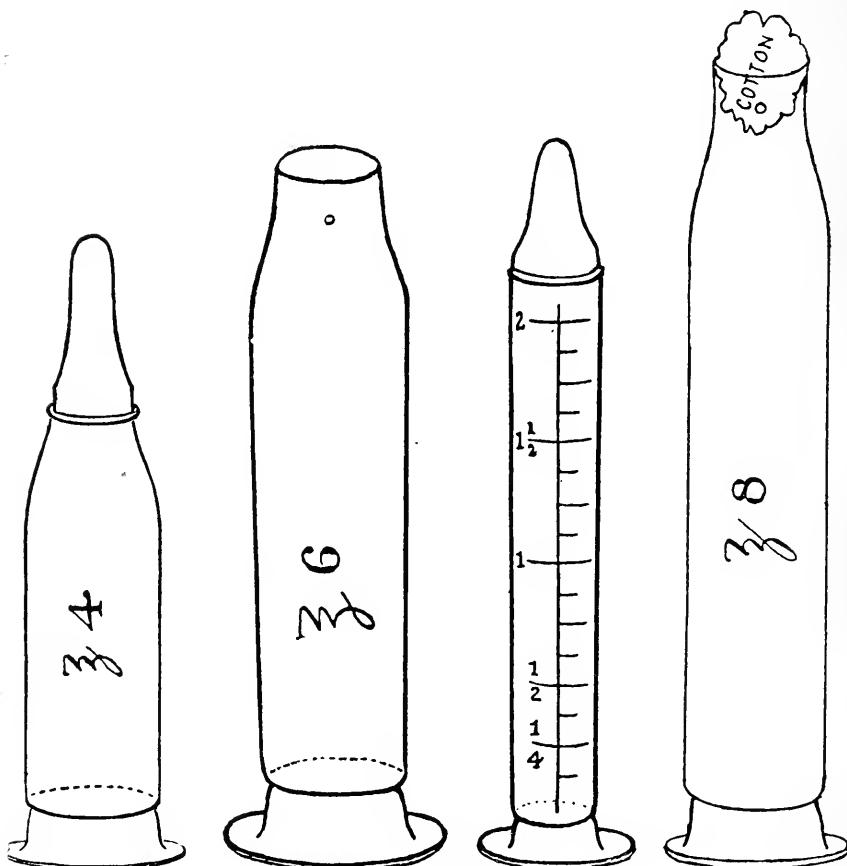
GENERAL RULES FOR FEEDING DURING THE FIRST YEAR.

The day feedings are supposed to begin with the 6 A.M. feeding and to end with the 10 P.M. feeding.

Age.	Intervals, Hours.	Number of Feedings in 24 Hours.	Number of Night Feedings.	Amount at each Feeding.		Total Amount in 24 Hours.	
				C. C.	Oz.	C. C.	Oz.
1 week	2	10	1	30	1	300	10
2 weeks	2	10	1	45	1 $\frac{1}{2}$	450	15
4 weeks	2	9	1	75	2 $\frac{1}{2}$	675	22 $\frac{1}{2}$
6 weeks	2 $\frac{1}{2}$	8	1	90	3	720	24
8 weeks	2 $\frac{1}{2}$	8	1	100	3 $\frac{1}{2}$	840	28
3 months	2 $\frac{1}{2}$	7	0	120	4	840	28
4 months	2 $\frac{1}{2}$	7	0	135	4 $\frac{1}{2}$	945	31 $\frac{1}{2}$
5 months	3	6	0	165	5 $\frac{1}{2}$	990	33
6 months	3	6	0	175	5 $\frac{3}{4}$	1035	34 $\frac{1}{2}$
7 months	3	6	0	190	6 $\frac{1}{4}$	1125	37 $\frac{1}{2}$
8 months	3	6	0	210	7	1260	42
9 months	3	6	0	210	7	1260	42
10 months	3	5	0	255	8 $\frac{1}{2}$	1275	42 $\frac{1}{2}$
11 months	3	5	0	265	8 $\frac{3}{4}$	1312	43 $\frac{1}{4}$
12 months	3	5	0	270	9	1350	45

The above table is given as a safe average to begin with. Dr. Rotch says it is so important to avoid stretch-

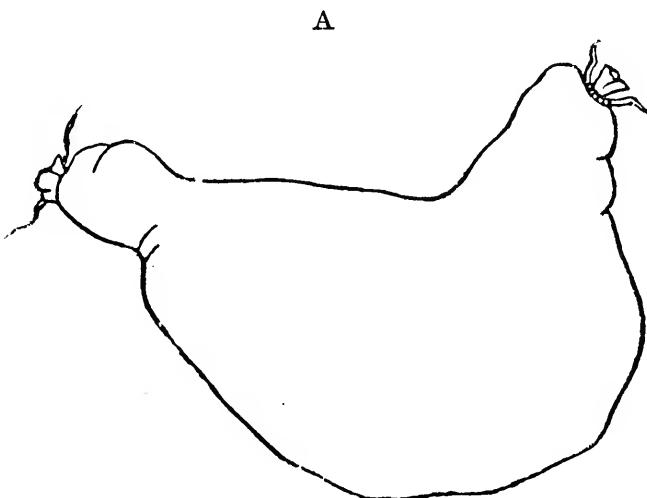
ing an organ so easily distensible as the stomach that it is wiser to give too little rather than too much food in the early days of life. An unusually heavy child might require a little more; for instance, a child weigh-



ing ten pounds at birth would, according to tables regulated by weight, require $1\frac{1}{2}$ ounces instead of 1 ounce at a feeding, if in a healthy condition; but this the attending physician should determine. Dr. Rotch advises the use of a set of graduated feeding-tubes

during the more important periods of growth, for the purpose of continually impressing upon the mother and the nurse what the physician often has the opportunity of telling them only at the beginning of the nursing period,—namely, that the error is in giving too much food rather than too little. This error naturally results when, as is commonly the case, the usual eight-ounce nursing-bottle is used at the very beginning of infantile life.

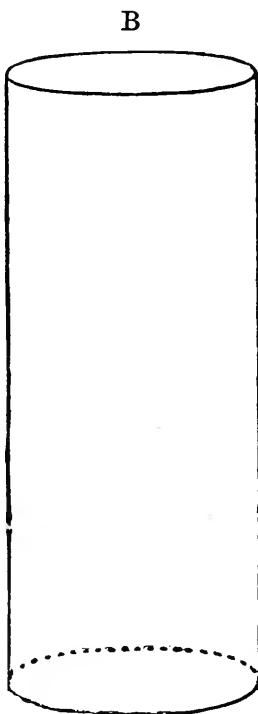
He says he has found that he can easily convince most mothers of the mistaken zeal of nurses who advocate giving the young infant large amounts of food, by showing them the size of the infant's stomach at birth (A) and comparing this small tube (B) which



corresponds to the stomach's capacity with an eight-ounce nursing-bottle.

If my readers still think they can decide for themselves upon "what to feed the baby," in defiance

of well-established principles in infant dietetics, and ignoring the fact entirely that it is unsafe for the laity to decide upon so important a question, it is to be hoped that they will at least bear in mind the following facts: that it is at all times advisable (1) to insure purity of milk by heating to about 167° F. for ten or



fifteen minutes, (2) to dilute milk with boiled water, for the first nine or ten months of the first year of an infant's life, beginning with at least half water to half milk for an infant one month old, (3) to add cream to each bottle of diluted milk in order to supply the fat lost by dilution, (4) to add milk-sugar and a little lime water, according to some reputable physician's

formula, or that of a milk-laboratory, and (5) to add carefully prepared cereal foods very gradually at the proper time, not before eight months under any circumstances, and preferably not until the end of the first year. If, however, the whole duty owed to children is fully appreciated by those in charge of their welfare, all uncertain methods will be avoided and every point relating to the feeding of a child, from infancy to adolescence, will be carefully considered and its importance be fully estimated. Dr. Rotch says truly that the subject is a great one, worthy of the attention of the greatest minds of the age, and that the responsibility of discussing so serious a question is a grave one, that should be taken up carefully and dealt with broadly. He says "the preventive medicine of early life becomes pre-eminently the intelligent management of the nutriment which enables young human beings to breathe and grow and live."

CHAPTER III.

Cereals, Bread, Crackers, and Cake.

CEREALS.

CEREALS are a necessary food for growing children, as they are rich in the constituents required for energy and for tissue-building, and promote fine muscular development. As more of tissue food is needed when the body is growing rapidly than in adult life when repair alone is called for, cereal foods must not be neglected at the proper time. Starch being the predominant constituent, it is evident that great care must be exercised in cooking the various grains allowable in the nursery, always keeping in view the fact that a double boiler of agate or porcelain is necessary, and that long cooking increases digestibility. It is important to know what you want to accomplish when cooking cereals. All starchy foods should be cooked long enough to be put in a condition to be easily acted upon by the digestive juices. The purpose in preparing them is to secure the bursting of the granules and the liberation of the starch by the highest temperature it is possible to reach, that it may be acted upon by the heat and be partially changed into a substance called dextrine, which is easily digested. An extremely high and prolonged temperature is required for this change, without which cereals are not nutritious and are likely to cause digestive troubles.

Starch foods imperfectly cooked undergo fermentation, therefore it is necessary that this method of cooking grains be followed for the nursery. Diastase, a substance found in growing grains and used in malt extracts, is sometimes used for this purpose, especially for children who are ill or convalescent, as it effects a more complete change of the starch, thereby saving an appreciable amount of force in the alimentary tract, but it should be used by medical advice only, as a healthy child, if properly fed from the first, should not need it.

The following cereals are all suitable for nursery use: granulated or crushed wheat, which is an all-year-round food, possessing no fat, and requiring cream to make it a perfect winter food; cornmeal, a winter food, which builds up strong tissues and is useful in constipation; purified or cooked gluten, the latter of which is always ready for use; oat flour, from which a delicious blanc-mange can be made; crushed barley, which, when properly cooked in milk or water, is an easily digested nursery food, and when mixed with gluten, half and half, stirred into cold water, and afterwards well cooked, is extremely palatable; farina, which when subjected to high heat in preparation becomes a desirable and nutritious nursery food, used either as a gruel, a porridge, or in desserts.

The list of cereal preparations to be found for sale is endless, but for nursery use one need not go far to find a few perfectly prepared foods of this class that are assimilable when properly cooked, and which will supply the needs of growing children in variety as well as in constituents. Being heat-producers, they

should be used carefully in warm weather; white hominy, rice, gluten, barley, rye, and wheat preparations are the most desirable, as they possess little or no fat.

Farinaceous foods should not be used at all during the first year, unless by medical advice, and they must be used very cautiously even in the second year, when milk should still predominate as a food.

Oatmeal is the usual cereal to begin with in the nursery, as it contains all the necessary elements for growth, including fat, but for this very reason, if the use of cereals is begun in warm weather, wheat is preferable. When cereals are first given to children after an exclusive milk diet, difficulty in digesting them is sometimes experienced. The change must be made very gradually. Fairchild's peptogenic powder may be used in a very simple and satisfactory way with cereals if any trouble is manifest, by sprinkling it lightly upon porridge or any starchy food, using care to have the food warm—not hot. When used in this way it should not be relied upon for any length of time, but should be gradually discontinued as strength for digesting starchy foods increases. A little observation will soon show whether it is advisable or necessary. Where there is doubt the child's physician should be consulted. When used in this way it should be considered a temporary aid only.

For preparing cereals the proportions of water, milk, salt, etc., may readily be learned from any cook-book, or from a little experience, individual preferences requiring various amounts for the consistency desired. Personally, I prefer the use of a larger proportion of

water than is usually given. They should be served preferably with salt and cream; however, in cases of particularly active digestion and where dietaries are well regulated a little pure sugar (granulated) may be allowed.

BREAD AND CRACKERS.

The government reports of the adulteration of bread with alum, sulphate of copper, ammonia, flours other than wheat, inferior grades of flour, damaged pease, ground rice, cornmeal, etc., should be sufficient to convince the most sceptical mother that for nursery use well-made home-made bread is infinitely preferable to ordinary baker's bread. According to these same reports, flour is rarely adulterated. For many years the white flour of commerce was considered the most desirable, but during recent years, with the advances made in the study of dietetics, the nutrient value of the gluten of the wheat grain has become appreciated, and improved methods of milling have been adopted, which prepare wheat in such a way as to preserve the dark layer of gluten which, when remaining in the flour, changes its color from white to brownish yellow. This gluten is a necessary constituent for the perfect food that wheat should be, containing as it does all the elements that form muscle, blood, and brain, being deficient only in fat, which may be supplied, if desired, by the use of oat flour, in the proportion of one-third, but for general use for bread in the nursery there is little necessity for any meal beyond a good wheat flour, as the necessary fat may be supplied by the use of good butter spread upon the bread. For growing

children who are restricted in a mixed diet whole meal bread is vastly to be preferred to that made from the whiter flours of less nutrition, as it supplies nutrients usually received by adults through other articles of food. Well-baked cornmeal bread or muffins may be used, at certain ages, in fall and winter, as an occasional variation, as cornmeal is heating, nourishing, and easily digested, but care must be taken to have the meal fresh, and not to use the bread when freshly baked; in fact, all bread for the nursery should be at least one day old, and should be thoroughly baked. Very few people of the present day realize or will acknowledge how many intestinal disorders are caused by the use of new bread, hot biscuit, etc. Their use should be strictly forbidden in the nursery, and well-made bread or cake is always improved by being kept a day before using, care being taken to keep it—not wrapped in a cloth—in a perfectly dry covered box: tin being better than wood, as it does not grow musty. Good bread should possess moisture, but not noticeably so. It should be of a yellowish-white color, and have a sweet, nutty flavor. It should also be of such a consistency as to crumble very easily. Practical experience is the best teacher when one is endeavoring to reach these conditions.

The gluten flour advised above absorbs more water than ordinary starchy flours, and needs less yeast. Brewer's yeast, which gives a good flavor on account of the hops used, or good home-made yeast, is not undesirable, but in these busy days no one need hesitate to save time and trouble by using the commercial compressed yeast of deservedly good repute, as it an-

swers every purpose. Heated milk may be used for mixing instead of water, if preferred, but a very good bread may be made very easily as follows, according to a recipe given by a cook who learned her art in Ireland. Her method reverses the usual directions in regard to the temperature of the oven, which, judging from the delicious results, is a very sensible procedure. The ease with which the bread is made will commend it to the busy housewife. Begin in the morning :

Flour, three quarts, sifted in a large bowl ;
Salt, two heaping tablespoonfuls ;
Sugar, four heaping tablespoonfuls ;
Water, or milk and water, two quarts, lukewarm ;
Yeast, one cake ;
Lard, three heaping tablespoonfuls.

Put the salt, sugar, and lard into the flour, and rub the lard fine by crumbling it lightly between the hands. Use warmed flour, especially in winter. Flour should always be warm for best results in baking. A good plan is to keep constantly on hand near the fire a bag or covered pan of well-dried flour for bread, cake, or biscuit. Dissolve the yeast in the warm water, and pour it over the flour, mixing with the hands ; then sift in gradually a quart or more of flour, adding until the dough can be turned out on the board. Knead lightly from ten to fifteen minutes, adding flour until the loaf does not stick to the board. Put it back in the bowl, cover lightly, and let it rise in a temperature of about 75° F. for three hours. Cut into loaves and put into buttered pans, letting them rise on the rack above the range, or in a place of equal temperature, for half an hour, when they will be ready to be

placed in a moderately quick oven. After half an hour, as the bread rises in the oven, increase the heat slowly to the end of the time required to bake the loaves. The time to be allowed for baking an average-sized loaf is one and a quarter hours. The usual plan in baking bread is to begin with a temperature of 400° F., gradually lowering to 250° F., with the frequent result of a loaf of bread that is soggy in the inside and very hard on the outside. In the above method the reverse is the case. The result should be dry, well-baked, evenly browned loaves of bread, that still retain enough moisture to keep them as they should be. The use of an oven thermometer is advised.

The art of making good bread is certainly one of the most important cooking processes to which attention should be directed in the present era of reform in dietetics and household science. The digestibility of bread and its nutritive properties depend very largely upon the mode of preparation and the kind of flour employed. (Yeo.) Coarse meal breads are unfit for the nursery, as they are usually heavy and indigestible. Bauer observes of bread made of coarse, adhesive meal, "Such adhesive breads are very imperfectly utilized by the human organs of digestion, since the irritation they cause to the mucous membrane of the alimentary canal leads to a rapid progress and early evacuation of its contents." This explains the occasional use of such bread for adults, but other methods should be employed in the nursery for a difficulty which need not exist with the proper care of diet. The use of bread made from the whole grain meal should be encouraged for children, for the following

reasons : they must be restricted in a meat diet, therefore such bread supplies a much-needed addition ; it contains forty instead of twenty per cent. of gluten, and contains twice as large a proportion of certain salts—chiefly phosphates—as white bread ; it contains also the laxative fatty matter upon which great dependence is placed when arranging a dietary for children.

Some idea of the proportions of nutrients in beef, oysters, and flour may be gained from the reports of the Storrs' School Agricultural Experiment Station, Connecticut, where Professor Atwater, whose diet articles have explained much that has hitherto been but vaguely understood, is conducting experiments that will mark this era as an important one in domestic science in its relation to dietetics. He says that a quarter of a dollar invested in the sirloin of beef at twenty-two cents per pound pays for one and one-seventh pounds of the meat with three-eighths of a pound of actually nutritive material, which would supply 1120 calories of energy—*i.e.*, heat—to keep the body warm and give muscular power for work. The same amount of money paid for oysters at the rate of fifty cents per quart secures but two ounces of actual nutrients, 250 calories of energy. But in buying wheat flour at seven dollars a barrel, the twenty-five cents pay for six and a quarter pounds of nutrients and 11,755 calories of energy. 3500 calories are said by Professor Atwater to represent the American standard for the fuel value to be derived from a proper dietary for a man with moderate muscular work. It is of importance that facts like these should be gen-

erally known, as this knowledge is one of the first steps towards dietary reform.

Points to remember in buying flour and baking bread are that a good bread flour does not cake in the hand when squeezed, that kneading must be done lightly to keep the bread porous, and that the temperature for the rising of the sponge should be from 70° to 80° F., not higher.

The use of bread in the nursery may begin as early as twelve months if a sufficient number of teeth are present, which should be the case at this age. Dr. Rotch says, "Good butter on the bread may usually be allowed at sixteen months."

In some form, at the ages indicated, bread or crackers should be given at each meal,—*i.e.*, stale bread or crust of French bread, zwieback, toast, and Graham bread, or soda, oatmeal, Graham, gluten, or educator crackers. These are all permissible when they can be chewed thoroughly. Oatmeal and Graham crackers belong to laxative foods, and should be used accordingly. Jerome Walker, M.D., pertinently says, in regard to this subject,* that "probably, with the exception of candy, no article that is eaten is so much abused as the animal-cracker. Before these crackers were introduced children were content with a few butter, soda, milk, or even ordinary sweet crackers at one time, but now the child is anxious to eat a number of animals. The cracker-maker, detecting this propensity in children, furnishes a wonderful assortment of animals, and the child is eager to eat one, at least, of each kind pur-

* Babyhood.

chased. The mother thinks these animals are so nice for the children to play with that frequently she sends out for a half-pound or a pound, and gives them to the child to keep him quiet as he is trundled along in his carriage. What is the consequence of so much sugar and starch? It perverts the appetite, teaches the child to reject soups, broths, bread and butter, and milk, and to prefer sweets and pastries, and also induces starchy dyspepsia."

The use of zwieback (twice-baked bread) can be thoroughly recommended. It possesses the advantage of being more easily digested than ordinary bread on account of the complete conversion of the starch into dextrine as the result of the double baking.

The following recipe may be used for zwieback, for a change from that made from ordinary home-made bread :

MORAVIAN CAKE.

This is best when started in the morning, unless the last rising can be attended to very early in the morning. If this can be done, set the sponge about five o'clock in the evening, using one cup of potatoes mashed in one cup of the water in which they were boiled, one cup of sugar, one-half cake of yeast dissolved in a little warm water, with flour enough to make a thick batter. Cover and keep in a warm place (about 80° F.); beat occasionally during the evening, and at ten or eleven o'clock mix in the batter one cup of sugar, three eggs, and three-quarters of a cup of lard and butter, a pinch of cinnamon, and enough flour to stiffen, kneading it well into a dough that will not stick to the sides of the

bowl. Leave it well covered, in a temperature of 70° to 75° F., until early in the morning, shape into loaves or any form desired, let rise for half an hour, spread the cake with a sauce made of a cup of sugar, one tablespoonful of hot water, a small piece of butter, and enough cinnamon to darken the sauce, and bake in a moderate oven.

The above may be used as sweet bread, cake, or toast. By cutting it into thin slices, buttering it lightly, and browning delicately in the oven, you have a delicious change for the frequently stereotyped nursery menu.

A word of caution should be heeded when making toast. It should be done in such a manner as to dry it thoroughly in the middle before browning takes place. Soggy, quickly made toast is decidedly not allowable in the nursery.

A simple sponge or tea cake may be used occasionally, when given with moderation to children over five, either in the form of lady-fingers, or as the ordinary sponge or tea cake made by the average cook. It must be well baked, not fresh, and should be just as light and porous as good bread should be, not noticeably moist, nor rich, nor full of fruit.

CHAPTER IV.

Broths and Soups.

THE first point to impress well upon the mind in making broths and soups for the nursery is that good material must be used, and that the meat must be treated in such a manner as to extract the nutritious juices. This cannot be done by using hot or boiling water, which, incredible as it may seem to those who know better, is frequently done. Cold salted water must be used, and the meat should be allowed to soak in the water for several hours before it is subjected to heat. Even then it should only simmer (not exceeding 160° F.). At the last it may be boiled for one or two hours to dissolve the gelatin of the bones, etc., if they are used, but this is not necessary, as chopped lean meat is preferable for nursery use, and a continued low temperature without boiling will produce a very nutritious broth. The time for simmering may be regulated by the requirements of the household, the minimum time being two hours. If the broth is to be used the same day, it is well to have the meat delivered at an early hour, as this will allow ample time for the entire process before the hour of nursery dinner, using ice for cooling and skimming, which must be carefully done. It is preferable, however, to have it made the day previous, as then every particle of fat can be removed. Fat plays a very

important part in nursery diet, but it is not to be served floating upon poorly made soups. The greatest care should be exercised in this direction.

Chopped lean beef or mutton (from the neck preferably), a half-pound daily, with one pint of water, different vegetable seasonings, with a little veal added to the broth occasionally, should give sufficient variety, with the addition of milk and chicken broths, for the requirements of any nursery. Yet, if for any reason it is desirable to have something different, there are many well-recommended recipes from which to select. For children over fourteen months of age rice, tapioca, barley, or sago may be added to beef or mutton broth, half a tablespoonful to the pint, but it must be thoroughly cooked. Different vegetables may be added later in the same way, to give variety for children over two and a half years old, spinach, celery, onions, and cauliflower being especially useful from a dietetic stand-point. Macaroni in its various forms may also be used as an addition, and makes a pleasant change. If, in making broths, the measure given is reduced by cooking, add sufficient water to keep to its original quantity. When using parsley for seasoning, do not mince it in the usual way. Children will frequently object to it, and by using a bunch uncut the same result will be attained. This applies as well to celery, spinach, cauliflower, and onions. Children have been educated to eat these vegetables without any trouble beyond first introducing them into some favorite soup, not using too much at first, and having even that pressed through a purée sieve, gradually increasing the quantity until the taste is acquired. This is not

always necessary, as in some instances the little ones take kindly to and enjoy them from the first. The suggestion is given for those mothers who find difficulty in getting children of three or four to eat juicy vegetables, which are an important adjunct to nursery fare. Dr. Yale says,* "The value of these vegetables is not so much from their nutritiousness, which is not very high, as because of the salts they contain, and because they are palatable to many. By reason of the salts, they are useful as preventives of scurvy, a disease, however, not common in childhood, except when the diet has been particularly restricted. They should all be very thoroughly cooked, and if passed through a purée sieve will generally agree. But for some digestions the flatulent tendency of the onions and cauliflower cannot be gotten rid of even in this way."

Cooks should be instructed to save all the water in which these vegetables have been boiled (taking it for granted that they have previously been properly washed), as there is nothing more delicious to add to stock than these flavored waters. They can also be utilized in making milk broth, which is nutritious as well as stimulating. Many an adult who dislikes milk, hot or cold, would be surprised, were he to try it, to find how palatable a well-seasoned hot milk broth can be, and how quickly it drives away that tired feeling which is the natural result of a busy day.

In making broths or soups use agate, porcelain, or earthenware; metallic utensils give a bitter taste. A

* *Nursery Problems.*

close cover is also necessary to prevent evaporation and to keep out the dust.

The following recipe, given for a nutritious beef broth, will prove a comfort to busy mothers, as children rarely tire of it, and it can be made in quantity, keeping perfectly in a cool place. There is then very little labor connected with this portion of the dinner to be prepared daily beyond changing the seasoning from day to day. Another point in its favor is that it may be taken from a cup or glass, consequently the busy mother is free to attend to the remainder of the dinner, or to take a moment's rest while the little ones are enjoying their broth. Young children are generally better able to handle a cup or glass carefully than a spoon. These things may appear trifling to many, but a little rest is a priceless boon to a tired mother, who too often pays little attention to her own requirements in any direction.

BEEF BROTH.

The materials needed are chopped lean beef, cold salted water, in the proportion of a pound of meat to a quart of water for children two and three years of age, and a pint of water and one large onion cut into pieces for children over three. Soak the meat, and onion if used, in the cold water for two hours at least (six is better) in the vessel in which it is to be cooked, keeping it on ice or in a cool place during this time. Then set it upon the back of the range, or, if it is to be made upon a gas, alcohol, or oil stove, use a double boiler, and keep the heat moderate by regulating the flame. Keep the vessel covered, and allow the broth

to simmer, keeping up the original quantity of water for three hours at least. Let it cool overnight, remove the fat in the morning, and keep covered in a cool place until needed. If this is done, and the entire quantity is reheated to the boiling-point every time that some of it is used, it can be kept in winter for several days. An Arnold nursery cooker may be used very satisfactorily in making this or any other meat broth.

The variety of seasoning should be considered when preparing the dinner for the general household, as labor is thus economized. For instance, if spinach is to be cooked for late dinner, a portion of it pressed through a purée sieve, with some of the water in which it was boiled, should be saved for the children's broth next day, care being taken to have it put on ice in china, glass, or agate, closely covered. (Spinach to be delicate must be boiled rapidly in a large quantity of water.) There will be no danger of the little ones' growing tired of an endless succession of plain meat broths, if the vegetables allowable in the nursery are used in this way for variety.

Alternate the above for children over three years of age with any of the following soups, as they may fill in with the general household cooking; but it is advisable to have the beef broth on hand at all times to be provided for emergencies.

MILK SOUP.

Ingredients required: one pint of milk, one quart of boiling water, two onions, salt, a teaspoonful of butter, one heaping teaspoonful of flour.

Boil the onions tender, and press through a purée

sieve into the water in which they were boiled, using an agate saucepan, adding sufficient boiling water to make a quart. Season with salt, add the milk, rub the butter and flour together, and stir into the soup, bringing it to the boiling-point, stirring all the time. Serve hot, as a tepid milk soup is abominable. By the time the little ones are ready to take it the temperature will be about right. This soup may be varied in endless ways with the vegetable waters indicated above, or with vegetables, chopped oysters, chicken jelly, etc.

CHICKEN BROTH.

Cut up a fowl (not a young chicken) into small pieces, rejecting the fat and skin unless the latter is white and tender, cover with cold water, and simmer gently for six hours. Cool overnight, and remove the fat. A four-pound chicken will make two quarts of broth. A little gelatin dissolved in every cupful is useful in cases of convalescence, especially during digestive difficulties, and it may be used generally in the nursery. The broth may also be thickened with corn starch, flour, or arrow-root.

Chicken milk is a particularly delicate preparation, and can be made readily from the above if the broth has jellied. If not, it must be further reduced. Put in a saucepan a stalk of white celery and a stalk (not cut) of parsley with a little salt, add a pint of the chicken jelly with some of the meat, and boil until it falls from the bones. Strain and add the same quantity of fresh milk, presupposing that the pint of chicken broth has been kept intact. Bring this to the boiling-point several times and strain into a cup. This is

very nutritious, and forms a slight variety. (Trained Nurse.)

BARLEY BROTH.

This broth is also very desirable for nursery use. Take the best end of a neck of mutton or lamb, cover with two quarts of cold water, and add a teacupful of crushed barley. Let it stand upon the back of a hot range for an hour, then move it forward, adding at this time the vegetables desired, cut into small pieces, and let it simmer for five hours.

Cool overnight. Skim and season with salt. It is almost impossible to skim mutton broth thoroughly unless it has stood overnight. Any one trying to do so will be easily convinced of the truth of this statement.

I. Burney Yeo, M.D., says, "Soup at the beginning of the dinner has been objected to on the ground that it diminishes digestive power by diluting the gastric juice, and this objection is valid if a large quantity of badly made soup is taken. But it does not apply to a small quantity—four to eight ounces—of well-made clear soup. Such a fluid disappears quickly on reaching the stomach, as it is rapidly absorbed by the blood-vessels, and interferes in no way with the gastric juices. Its value at the commencement of the meals depends on the fact of its rapid absorption and entrance into the blood, so that the hungry man is quickly refreshed."

This will explain to many the need of well-made soups, and will also indicate why the preference exists for the lighter broths, unless, as occasionally happens, the soup is made the principal feature of the meal, which should not occur in the nursery.

CHAPTER V.

Meats, Eggs, Fish, Oysters, Etc.

THE object in cooking meats is to retain as much nourishment and flavor as possible, and the process is directly opposite to that for making soup, a low temperature being required for the latter, while a very high one is necessary for the former, to coagulate quickly the albumen on the outside surface and thus confine the nutritive juices within.

There are many methods of cooking meats for general use, but for the nursery it is desirable to broil, boil, or roast, with the preference for broiling, because it gives the best results in point of delicacy, and, if properly done, will be found in every way to be the most satisfactory. For the sake of convenience alone, broiling may well be considered and preferred, as mid-day dinner for adults is rapidly disappearing, and to roast or boil large joints of meat for possibly one child's dinner is not generally feasible.

“Left-overs” are decidedly not to be used in the nursery, if for no other reason than that in many houses cooked and uncooked foods of various kinds are kept in uncovered dishes from day to day in one common refrigerator or closet, absorbing unwholesome germs from surroundings that, to say the least, are not sanitary. That such difficulties may be avoided, where the mother for sufficient reason is unable to supervise

affairs in her own kitchen, it is always safer to direct that the meats given to the children be broiled, unless the arrangements of the house will allow for meat that has been roasted or boiled in time for the nursery dinner.

The selection of meat that has been properly hung is as important as the cooking. It should be hung for a period varying from seven hours to six days. A reliable meat dealer is a necessity when one is buying for the children. He is in a better position, and better able to judge and select, than the average householder, and it is a comparatively easy matter to interest him in the wants of the children and the necessity for the exercise of great care in selection. It is rather a difficult matter to choose a good cut of meat. Yeo says that which contains much fat is generally less digestible and less palatable than lean meat; that there is less nutritive value and more gelatin in the meat of young animals than in that of mature ones; and that beef is undoubtedly the most nutritious of animal foods, and is used most extensively. The best portions for nursery use are from the loin for broiling, and from the neck, rump, or first and second cut of the round for other uses, which will be indicated. This selection is independent of joints for roasting or boiling. Either a sirloin, porterhouse, or tenderloin steak is most suitable for broiling, and it should be cut from one to two inches thick—two inches is better—to keep the meat juicy. Trim off the fat, wipe with a clean damp cloth, place in a heated wire broiler which has been greased to prevent sticking, and hold directly over a glowing bed of coals. A live fire is necessary, not one that has begun to cool. It is quite an art to

prepare a fire for broiling that will keep clear and hot to the end of the process. No stint of coal is to be allowed for one hour at least before the fire is needed. It is a good plan to direct servants to see to it or to attend to it personally at twelve o'clock for one o'clock dinner, that the fire is clear at the bottom, that enough fresh coal has been put on, and that it is then allowed to burn by regulating the draughts so that it will be a bed of glowing coals when required. The steak should be turned five or six times during the first minute, that the outer sealing may be quickly done; then the broiler must be held farther away, and the meat finished more slowly, turning at this stage once every half-minute until the meat is done. It should be pink and juicy inside, but not raw, as we so frequently find it when served as so-called rare meat in hotels or restaurants. Seven to ten minutes over a good fire will usually cook to perfection a steak from an inch and a half to two inches thick. Have the plate upon which it is to be served warm (not hot), season the meat with salt, and use care in handling it that the surface may not be broken and the juice lost. For nursery use, salt is the only condiment allowable. Never use melted butter on the meat; all the butter required by children should be taken as cold as possible upon the bread that is eaten, not upon meat or vegetables (except in cream sauce, as indicated elsewhere), if freedom from indigestion is desired. When broiling thin steaks, or a tenderloin which may not be very juicy or of good flavor, it is a good plan to lay a thin piece of round steak upon both sides of the tenderloin before broiling, and thus get a delicious steak, discarding, of course, the

outer pieces, the juice of which has entered the middle steak.

Scraped beef makes an acceptable change, either cooked or raw, when allowed by the family physician, and it may be used at an earlier age than meat is usually given. Use a thick cut from the tender part of the round or rump, scrape off the pulp with a silver knife, rejecting the tough fibre, and mould it into cakes about an inch thick; then broil on an oyster broiler as you would an ordinary steak. When for any reason it is inconvenient or impossible to broil a steak or scraped meat, heat thoroughly a thick iron or steel pan, sprinkle salt over it to prevent sticking, and cook the meat in the same manner as if using a solid broiler, turning with a knife or spoon, not a fork, that no juice may escape. Turn quickly at first and have the pan scorching hot, then moderate the heat, and finish more slowly. Very good results may be obtained in this way. Do not put fat into the pan, as is so frequently done.

The above directions apply as well to the broiling or panning of lamb- and mutton-chops, which should also be cut thick and be well trimmed. It requires from four to six minutes to cook a chop one inch thick. Mutton is supposed to be more easily digested than beef. It takes three hours to digest broiled beef-steak, three hours and a half for roast beef, and four for that which has been fried. The conclusion to be drawn is evident.

BOILED MEATS.

When boiled meat is desired, use water that is boiling rapidly to seal the meat, as one of the first results

of putting meat into water that does not boil is that some of the valuable ingredients of the meat pass into the water. By having the water boiling rapidly this is prevented, and by continuing the boiling for five minutes the meat has a protective covering formed about it that keeps it juicy and nutritious. It should then be cooked at a considerably lower temperature, about 160° F. It may be a little higher, but should not be much less. This method applies to boiling poultry whole, as well as to beef, lamb, or mutton. When boiling beef, allow from twenty to forty minutes to the pound, according to the quality of the beef. For a boiled leg of lamb or mutton allow fifteen minutes to the pound. Lamb is best when used within several days after killing, as it is in season after warm weather begins, from April to September, when it is difficult to keep it longer. Mutton may hang for three or four weeks in cold weather, and it will be improved by the hanging.

MEAT STEWS.

A dainty and wholesome little meat stew may be made for the nursery as follows: Cut a tender piece of beef, lamb, or mutton into small squares, rejecting all fat; just cover it with boiling water and allow it to simmer until very tender, adding in the beginning either a bit of onion, a sprig of parsley, a stalk of celery, a few leaves of spinach, or a few small pieces of cauliflower, for flavoring, and add a very few small squares of potato; season with salt when nearly done. If the child for whom this is prepared likes the vegetables mentioned, and is old enough, they may simply

be cut into small pieces ; if not, they should be pressed, when tender, through a purée sieve. Zwieback, broken into small pieces (mere crumbs), is a very nice addition to either a stew of this description or to the broths which frequently take the place of meat for very young children just beginning upon a mixed diet. A stew of this character, a dish of spaghetti, good bread and butter, and some light dessert, like cup custard, will make a satisfactory dinner menu for a four-year-old. The stew in this menu supplies the salt-giving food required.

ROAST BEEF.

Roast beef, when used for children, should be rare and lean, with dish gravy from which all fat has been removed. If best results are desired, when roasting either beef, mutton, or fowl, see that the oven is very hot to begin with (in these days of ranges it is to be regretted that ovens must be used instead of spits), cooling it slightly after the sealing of the surface has been done ; then baste carefully, or use a double pan, allowing fifteen minutes to a pound for rare meats, twenty for well done.

SWEETBREADS.

Genuine sweetbreads are allowable in the nursery as well as in invalid dietaries, as they are readily digested. They are not considered very nutritious. They must be prepared in a manner suitable for children. As soon as they come from the market they should be cleaned and parboiled. To clean, cut off all fat, bruised parts, etc., and wash quickly in cold water ; boil in a granite saucepan from fifteen to twenty min-

utes, using boiling salted water at first; then cool and put away until needed. To complete cooking them for children, cut them into small squares and stew them carefully in a sauce prepared as follows: Rub a teaspoonful of good butter into a tablespoonful of flour, using one cup of milk or cream; heat the milk in a double boiler, add the thickening (stirring it in carefully), the sweetbreads, and a little salt. Stir continuously until both sauce and sweetbreads are cooked, which will be in about fifteen minutes,—in ten if made in a single saucepan. The double one is preferable, as it prevents scorching. Any sauce containing milk and flour should be made in a double boiler or in a small saucepan fitted into the top of a teakettle. Care must be taken to cook the sweetbreads the required time only, as longer cooking is likely to harden them. French peas, if tender, may be used with these for children over four when digestion is normal. A little beef broth, sweetbreads, either prepared as above or broiled, with peas or stewed celery, bread and butter, boiled rice, and a simple dessert, would be a satisfactory menu for the age mentioned, and, with the exception of the peas, perhaps, it might be given at three and a half, under average conditions.

EGGS.

Eggs are a desirable substitute for meat at any time, and as an article of diet, when properly cooked, give concentrated nutriment. They may be prepared in a variety of ways, with or without the addition of other foods, but for nursery use the plain boiled egg is most desirable. Care must be taken to have them per-

fectly fresh, as it is of great importance that stale eggs should not be used. A fresh egg will sink in salt water (one tablespoonful of salt to ten of water) and in proportion to its age it approaches the surface. Every woman thinks she can boil an egg, no matter how unskilled she may be in other branches of cooking, yet it is perhaps the least understood of all processes of making foods digestible by proper treatment. The usual method is to drop the egg in boiling water, which is allowed to continue boiling for two, three, or four minutes, according to the taste of the consumer. The result is either an almost raw egg or one with a hard white and uncooked yellow, and, generally speaking, the whole egg, when cooked in this way, is tough and indigestible, unless it is eaten almost raw. Sufficient boiling water (about a quart) should be set aside for a few moments, when it will be of the temperature required. It should then be poured over several eggs in a good-sized saucepan, which should be covered and set back upon the range from eight to twelve minutes, according to whether they are liked very soft or not. These eggs are milky-looking, soft, cooked all the way through, and are easily digested. Dr. Thompson gives an excellent way for cooking eggs, as suggested by Henry.* Immerse a teacup in boiling water until it becomes thoroughly heated. It is then removed and the egg is broken and dropped into it, and the cup may be wrapped in a cloth. Sufficient heat is retained by it to cook the egg without water and to remove any raw taste.

* W. Gilman Thompson, Practical Dietetics.

The white of egg, when eaten raw, diluted with water or milk, is easily absorbed, and is a valuable food in gastric disorders.

FISH.

Fish, if fresh and of the right kind, is an excellent food for the nursery. It is of great nutritive value, and is less stimulating than meat. Being digested more rapidly, it is necessary to consider this when estimating quantities for a child's dinner. A larger portion should be served than would be given if meat were used. Broths should always be used after four years to supplement a child's dinner when fish is given instead of meat. Children who are unable to take much active exercise should have fish and broths more frequently than meat, as fish is especially indicated for persons of sedentary habits.

Fish should be scaled and cleaned as soon as they come from market, washed quickly, and put in a cool place, not on ice, but near it if possible. The white-fleshed fish are the only kind to be considered in this connection, and the flesh should be firm and hard. If it is flabby it is unfit for use for child or adult. The German method of selling fish alive might well be introduced in this country.

For nursery use it may be boiled creamed, baked, or broiled, never fried. It should be served plain or with a sauce made of cream or milk as directed for sweet-breads. The well-beaten yolk of an egg may be added to this sauce after removing from the fire.

To cream fish it must be flaked, the bones removed very carefully, and then boiled gently for twenty min-

utes, seasoned with salt, and added to the cream sauce mentioned.

For broiling, turn the flesh side to the fire first, then the skin, taking care not to scorch the latter, which is very quickly done if care is not taken.

OYSTERS.

The soft part of oysters may be freely used in the nursery for children over three years of age. They are very nutritious, and are greatly desired as an appetizer and for variety. The soft part is easily digested and may be given raw to any child who takes meat and broths. The juice may be given earlier, in small quantity, but it is a frequent occurrence for a child under five to refuse to eat oysters offered in any way. They are a very acceptable addition to an ordinary milk soup when chopped fine, after the hard part has been removed. Care must be exercised as to season ; they are frequently placed upon the market before they are in good condition, and just as frequently they are kept for sale longer than is desirable. The season is supposed to be from September to April, but it is safer for children to consider it from October to March, unless cold weather has come early or continues exceptionally late. Oysters should always be kept in the shell, in a cool place, until they are to be used.

SQUABS, CHICKEN, ETC.

Squabs, partridge, pheasant, chicken, and turkey may be used alternately with beef and mutton for din-

ner menus, after three. Squabs and chickens should be stewed or broiled, and the most tender parts selected for young children; the white meat of roast chicken or turkey may be given if minced fine. Partridge and pheasant should be broiled and the breast used in the same way.

CHAPTER VI.

Inorganic Salts in Food.

VEGETABLES. FRUIT.

COMMON salt (chloride of sodium) is one of the most important ingredients of food, and its entire absence would be speedily fatal. It is the only condiment needed by children, and they will occasionally like a little in the water which they drink, as it seems to stimulate a delicate appetite. Experimental results have shown its necessity in the process of nutrition. It certainly makes digestion easier by rendering foods savory, and consequently causing digestive juices to flow freely. It is in all foods, but said not to be in sufficient quantity, therefore it must be added, especially to foods containing potash, as potatoes, for instance. The reverse is also true, as in a salt meat diet scurvy develops unless potash is supplied in the form of potatoes, etc., but, as salt meat has no place in nursery diet, this is simply of interest in a general way. A young child who eats potatoes freely will frequently be found to crave large quantities of salt, and will often eat it surreptitiously, possibly much to the astonishment of its guardians. This points directly to reform in the child's dietary. The desire will disappear if the use of potatoes is reasonably limited. Potatoes should never predominate in nursery menus ; rice, macaroni, etc., should be used for variety.

Cow's milk contains more potash than mother's milk, which explains why food specialists advise the use of salt with cow's milk. The relations of the different inorganic salts to one another in the nourishment of the child are of great importance, and it is a well-known rule in dietetics to supply them with great care. A farmer's wife follows this principle when she gives young chickens the mineral salts they need in the form of oyster- and egg-shells or lime, but she may not notice that her child, from the lack of these same salts in its diet, is developing rickets,—a disease which Eustace Smith says is one of the most preventable yet one of the most common. It appears among rich and poor, as a result of a poorly balanced dietary. Dr. Uffelmann says,* "Deficiency of inorganic salts in the food of growing children, easily overlooked by their guardians, is a frightful source of nutritive disorder. Deficiency of lime especially tends to result in rickets." Eustace Smith says, "Rickets does not produce malnutrition, but malnutrition produces rickets." As these remarks indicate, besides forming tissue, these salts are especially important in forming other teeth and bone, and an immense amount of the latter is formed during childhood. We are told that it is not until the end of the twelfth year that the cartilage entering into the formation of bone has become converted into true bone tissue, which fact will show to mothers the pre-eminent importance of supplying foods containing the required salts not only during the nursery period, but also during the following time, commonly called the

* Domestic Hygiene of the Child.

school period. Not only at this time, but even before the birth of a child his inheritance may be strengthened by a suitable dietary for the expectant mother, which should contain a full supply of phosphates and the necessary constituents for a well-balanced dietary, as indicated elsewhere. Nature does not err. Instinct teaches animals to seek for salt when needed, and the apparently natural craving shown sometimes by an adult or child for fruit and vegetables indicates the effort nature is making to assist in regaining a normal condition. A child's diet cannot be too closely watched in this respect, as the serious results which always follow neglect of such precaution—*e.g.*, the development of rickets, scurvy, eczema, in short, indigestion in its various forms and degrees, aggravated by inheritance of maladies largely induced by the same reprehensible course having been followed during the life of the parent—must show to mothers that the need is imperative for close study of domestic science as applied to this and other questions of similar import. Good habits of eating are easily established in the nursery by the use of tact and care, or by firmness, if necessary, but with a right beginning this is rarely necessary.

The practical application of the use of foods containing salts is, as nature indicates, to give to a child for the first year, unless advised to the contrary by a reputable physician, milk properly modified, and milk only, which contains all the salts and other ingredients necessary for normal growth. As stated elsewhere, this is a law in France, made to prevent infant mortality. Then add cereals very gradually, and well-made bread, not supplying farinaceous foods to excess,

which is of too frequent occurrence, and one of the first stumbling-blocks when changing from milk to a mixed diet. Milk should still be the chief article of food until eggs, broths, meats, macaroni, vegetables, and fruits, following in their order, have taken the places indicated elsewhere in nursery dietaries. When changing from a milk diet containing salts to a mixed diet which *should* contain them, owing to lack of knowledge, or perhaps of thought, the foods containing them (vegetables, fruits, etc.) are frequently omitted altogether, with the results enumerated above as a natural sequence (scurvy, etc.). It must never be forgotten by mothers that salts are invaluable as adjuncts to a concentrated diet, such as meat, eggs, etc., producing, in addition to their other functions, the necessary waste required for regular intestinal action. Their use in the order allowed in the nursery is fully indicated elsewhere, and practically illustrated in the selection of menus. Many mothers will say, "But I don't need any dietetic rules for my baby of eighteen months or two years. He eats everything and is quite well." L. Emmett Holt, M.D., says he has had quite a large experience with those children who "ate everything" and seemed to relish it, and has followed a number of them to their graves as the ultimate result of such unreasonable and inconsiderate practice.

THE USE OF VEGETABLES IN THE NURSERY.

Spinach.—Spinach, which is a wholesome vegetable when properly cooked, acts as a useful aperient, and is frequently prescribed for habitual constipation. It should be well cleaned, cooked in an abundance of

salted boiling water, and for young children pressed through a purée sieve. It may be served with or without a little cream. When prepared in this manner it will produce no irritation, and is a vegetable that may be used frequently in nursery menus, in broths, or alone. It may be used for children two and a half years old.

Onions.—The onion is valuable in several ways. It adds flavor to foods, and is slightly laxative. The French consider a purée of onions a great restorative in debility of digestion. Either the Spanish or Bermuda onion is preferable for the nursery. It should be boiled tender in stock or water and served with cream sauce, or baked, wrapped in a buttered paper, in a moderately heated oven. When made into a purée it is a satisfactory addition to a dinner consisting partly of starchy foods, like rice or potatoes, supplying the fat necessary for these vegetables in the butter added to the milk or cream in the sauce to be used with the purée. As onions belong to the variety of vegetables that contain little starch or sugar, a sweet dessert, like wine jelly, should be used with any menu calling for this vegetable. They may be used with care for children over three, watching for individual idiosyncrasies.

Celery.—Celery is both wholesome and digestible if in good condition. It may be eaten uncooked by children over six in very small quantities, as a single tender slip at dinner, and this well scraped, unless from the heart of the stalk. The outer stalks should all be scraped, to free them from the indigestible covering of cellulose, or woody portion, which is harmful for even

an adult. For general use in the nursery it should be stewed. Care should be taken to use the water also in which the celery has been boiled. This may be done by giving it as a broth, or by using it in making the sauce to serve with the celery.

Stewed Celery.—Cut off the tops of a bunch of celery, putting aside some of the tender and perfectly fresh portions for use for the general household. Cut the stalks into small pieces, first scraping them well. Boil quite tender in salted boiling water, just enough to cover the celery. It will take from twenty-five to thirty-five minutes over a quick fire. Serve plain, or with the usual cream sauce, made, however, from half celery water and half milk instead of all milk. Experience will show that the tops usually require a longer time to cook than the stalks. For nursery diet the tender portions also should be used. The addition of a white stock would make a pleasant change, especially if made of chicken, veal stock being not quite so desirable for the nursery. Allowable at two and a half years of age.

Cauliflower.—This vegetable is both delicate and digestible, and a tablespoonful may be eaten for dinner by a child over three years of age. It should be taken plain or with cream sauce, not with melted butter, which is never to be allowed on the nursery table. It is very nice when cut in pieces and stewed tender in beef stock or in chicken broth. Its preparatory cleansing must be very carefully done, a preliminary soaking, head down, being the first step.

Carrots.—If very young and tender they may be used very carefully for a child over five. Boil them

soft enough to press through a purée sieve, and serve a small quantity in broth or seasoned with hot cream and salt. They may also be tried, but cautiously, when cut in very small squares, served plain or not, as preferred.

Peas and Beans.—Dried peas may be used for children three to four years old if first soaked for twenty-four hours, cooked very soft, and pressed through a purée sieve. Fresh peas, if picked the day they are to be used, may be added to the dietary of a child of two and one-half years, but they should be very young and tender. They must be boiled rapidly from ten to twenty minutes in boiling salted water—just enough to keep them from burning—in a closed granite saucepan, remembering that for all vegetable cooking, in fact for all cooking in the nursery, porcelain or granite utensils should be used invariably.

Very young beans, or a purée of dried beans, may be tried cautiously for children over three. For best results both peas and beans, when fresh, should be cooked as soon as possible after picking. The use of these vegetables must be watched closely for indications pointing to assimilation or non-assimilation. It must not be overlooked that they supply a moderate amount of proteids, hence less meat should be used with a menu containing either peas or beans. A practical method for trying a new vegetable is to re-serve its use for a time when the child is in perfect condition, digesting its food easily, and when the menu contains nothing but food that has been tried and found to agree. The chances are then that if any trouble

arises it may be traced to the exact cause. Caution should always be the watchword in the nursery.

Asparagus.—Asparagus possesses diuretic properties, and is a vegetable strongly recommended for nursery use, especially when in season. For children, only the tips should be used, boiling them tender in boiling salted water, and serving either plain or with cream sauce. They may be used for children two and a half years old.

Tomatoes.—Tomatoes are not to be eaten when milk is in the dietary. If given at all, it should be after a child has reached five years. They should be cooked slowly for several hours in a porcelain or agate vessel, strained, and thickened with a little barley, wheat, or rice flour, or a few grated bread crumbs or grated crackers. Season when preparing with sugar, salt, and a teaspoonful of onion juice. Raw tomatoes must be used very cautiously, and not until a child is five years old. The seeds and skin should be discarded and the tomato should be fresh-picked and just ripe. An under- or over-ripe tomato is dangerous food. Tomato jelly may be tried for children over three if made from strained cooked tomatoes and gelatin, the latter to be used in the usual way.

Beets.—Beet root is a valuable vegetable, an appetizer, and belongs to the class containing sugar. This knowledge is of importance in selecting menus that should contain the proportionate amount of the necessary constituents. It is not indigestible unless tough and stringy. Very young beets may be cooked tender in boiling salted water in less than an hour. Care

must be taken to wash the root without bruising it, and to cut off the top at least an inch from the beet, as this will prevent the loss of the juice that is desirable. Serve plain, cut in dainty squares or slices. They may be added to the diet of a child five years old, with caution and moderation.

Apple Sauce.—This really comes under fruits, but it may be given at dinner in place of a vegetable at those seasons of the year when young fresh vegetables are difficult to find. It should be prepared very carefully. As quickly as the apples are pared and cored they should be dropped into cold water to prevent discoloration. When ready for cooking, put them into a double boiler of agate or porcelain, an earthen jar set in a pot of water, or in a nursery cooker, and steam until tender, adding no water to the apples. When done, beat up with a silver fork or spoon, and add a little sugar and a little lemon juice if liked. Cinnamon, delicately sifted over the surface, is a pleasant addition. If preferred, the sauce may be made, if done carefully, in an agate saucepan, using just enough water to reach the top pieces of apple (do not cover them). If pressed through a purée sieve it should be of agate, as one of tin destroys the delicate flavor of the apple. This sauce may be given to a child eighteen months old.

Brussels Sprouts.—Brussels sprouts, when very tender and perfectly fresh, may be carefully used after a child is six years old. They must be boiled tender in salted water, and served plain or with cream sauce.

Corn.—Corn for the nursery should always be used

as a purée, or boiled on the cob in boiling salted water for ten minutes, the tender part to be pressed out with the back of a knife after scoring. This may be given to a child of three, as, being freed from its indigestible covering, it will not irritate. As the child grows older, the corn may be grated and served in the form of a corn pudding or omelet.

There is probably no other rule so important for infant diet as that which regulates the amount of starch to be given to a child. Of the starchy foods allowed in the nursery for dinner, rice, potatoes, and macaroni are the most important. They are palatable foods and are easily digested if properly prepared and administered at the right age.

Rice.—Rice is not suitable in itself as a sole food. It is lacking in fat and salts, and is poor in nitrogenous substances, but the starch which it contains (its chief constituent) is easily digested, and it is, therefore, a very valuable food when mixed in proper proportions with articles of food that are rich in fat and albuminoids. It should not be given freely to a child until after two and one-half years, using it in broths from eighteen months to this age. A very satisfactory way to prepare rice for children is to wash it well, soak it overnight in cold water, and boil rapidly in an abundance of boiling salted water for twenty minutes. The grains will swell, and they are easy to digest. If the preliminary soaking is overlooked, wash the grains well and drop them gradually into the boiling water, care being taken to keep the boiling continuous while this is done, and boil rapidly for thirty minutes, stirring once or twice with a fork to keep the grains from

sticking to the bottom. When done, whichever method is followed, pour the rice into an agate sieve, let a quantity of hot water run through until it runs clear, and then set the sieve upon a plate in the oven until the rice is perfectly dry. This is a very good way to prepare it for breakfast for occasional use in place of oatmeal for the summer months, serving it with cream and a little sugar or salt as seems most advisable. Steaming is the method usually advocated for cooking rice. Inasmuch as the starch in rice is very easily digested, long cooking is not so necessary as when cooking oatmeal, etc. ; and as in selecting a child's menu we do not depend upon the small amount of proteids found in rice (which are said to dissolve in boiling), the above method, judging by results, seems to be practically preferable, although steaming may be considered so theoretically.

Potatoes.—The potato is a salt-giving starch vegetable, to be eaten with lean meats or other nitrogenous foods. It is three-quarters water, and prevents concentration in food. The remaining quarter is nearly all starch. Care should be exercised in the selection of potatoes, those that are yellowish white being preferred. The fact that it takes three and a half hours to digest boiled potatoes, and two hours for those that are properly baked, will indicate at once which method is preferable for the nursery. The desired temperature for cooking starchy foods can be reached in the oven with care, and a potato of medium size should be baked in from thirty to forty-five minutes. When done in this way, they may be given occasionally with dish gravy from roast beef, roast mutton, or broiled beefsteak, or

with salt and cream, to a child of eighteen months ; but it may be safer to wait a little while longer, according to the condition of the child. The potash in potato, which is an important salt and soluble in water, is not lost when potatoes are baked. For this reason, when mashed potatoes are desired for children, they should either be steamed in a steamer or a closed colander placed over boiling water, or be boiled in the skin. When done, they should be lightly beaten with a fork, and a little cream and salt added. If properly cooked in this way a potato will assume a mealy or floury appearance, and boiled potatoes should never be used in the nursery unless done in this way.

Macaroni, etc.—Macaroni, spaghetti, and vermicelli are all preparations of flour, supposed to be made from hard Italian wheat, rich in gluten. Sir Henry Thompson observes of macaroni, “ It is certainly to be lamented that so little use is made in our country of Italian pastes. Macaroni in all its forms is, in fact, an aliment of very high nutritious power, being formed chiefly of gluten, the most valuable part of the wheat, from which the starch has been removed. Weight for weight it may be regarded as not less valuable for flesh-forming purposes in the animal economy than beef or mutton. Most people can digest it more easily and rapidly than meat ; it offers, therefore, an admirable substitute for meat, particularly for lunch or mid-day meals.” It must be selected with care, as there are many imitations in market which contain little gluten and much starch. To prepare it for the nursery add about ten sticks of macaroni broken into small pieces to a quart of boiling salted

water, dropping the pieces in one by one, that the water may continue boiling. Boil gently for twenty minutes, drain thoroughly, and put it back in the saucepan, adding cream or a pint of milk thickened with a teaspoonful of flour rubbed smooth in a teaspoonful of butter, and allow it to simmer for another twenty minutes. Enough milk or cream should be allowed to cover the macaroni well when done with the cream sauce which results from careful simmering. Spaghetti may be prepared in the same way. Vermicelli is to be used as an addition to broths, but there is no reason why it also should not be prepared as directed above.

If any of the vegetables mentioned disagree, upon careful observation, with children possessing certain inherent peculiarities, their use should be postponed until after the second teeth have appeared. It is always advisable to watch for indications of habitual non-assimilation of certain foods, and, if necessary, not to use them until later years, when a more liberal dietary in many respects may be allowed.

Salads dressed with olive oil may be given after second dentition; the oil is a valuable nutrient, and the fresh green supplies an important part of a growing girl's or boy's requirements.

THE PLACE OF FRUIT IN THE NURSERY DIET

The use of fruits in nursery dietetics is of the greatest importance. They contain a very large proportion of water, but their chief food value lies in the sugar, acids, and salts which they contain, which cool the blood, aid the digestion, tend to promote in-

testinal action, and correct tendencies to constipation. They are especially adapted to the nourishment of the brain and nervous system.

The selection and use of fruit demand careful consideration, and it must be used moderately at all times, as any excess tends to intestinal irritation. The seeds, pulp, and cellular parts are usually the disturbing elements. The juices are, as a rule, perfectly wholesome, and may be used some time before solid fruits may be given. The *Lancet* says, "Nothing is more essential to learning than frequent reiteration. . . . It might be supposed that by this time every one understood the importance of observing particular care in the selection of a summer dietary, especially as regards fruit. Hardly any question of domestic management is either more vital or more elementary, yet error continually arises in this connection in the simplest way. A few days ago a child died soon after eating strawberries. Why? Because the fruit had been purchased *two days previously*, and, as was only to be expected, when eaten, was in a state of decay. It is impossible to resist the impression that neglect had something to do with the sad result in this instance. Luscious fruits are particularly liable to putrefactive change, and such thrifty processes as exposure to a cold and dry air, spreading out, and the like, suffice only to postpone decay for a brief period. We cannot do better than point to the incident above mentioned in order to remind the vender and purchaser alike that freshness is the only certain guarantee of safety when any succulent fruit forms an article of diet. We have not forgotten that another hardly less serious danger of the season awaits

those who indulge in fruit which is under-ripe. In this case taste as well as judgment commonly interposes a caution the importance of which can hardly be exaggerated. Yet here, also, the consequences of neglect have too often been sadly apparent."

As may be inferred from the above remarks, it is of the first importance that fruits be fresh, ripe, and in good condition. They must also be delicately handled, as their greatest value lies in the juice they contain, which may readily be lost in whole or in part by careless handling. A child two and a half years old may usually be allowed the juice and pulp of a sweet ripe orange; no amount of sugar will correct the acidity of a sour orange, in a wholesome way, for nursery use. The juice of a sweet orange is indicated in feverish conditions, and it may be freely used under almost all circumstances after a mixed dietary has begun. It is well to remember in giving all fresh fruits that the best time is to give them for breakfast or for early dinner, as all fruit allowable for supper should be cooked. It should also be remembered that when fat and meat form a considerable portion of the menu, fresh fruit should be carefully given; therefore, in winter menus, when fat and meat are necessary for dinner, it is advisable to use fresh fruit for breakfast and puddings, etc., for dinner desserts. In summer, when meat and fat should be sparingly used, fresh fruit may be given for both breakfast and dinner; never for supper at any season of the year. Baked apples may be used frequently after a child is two years old. Dr. Rotch says a baked apple may be given at the evening meal when a

child is fourteen to fifteen months old, or for variety the apple can be made into a simple sauce, never, however, having the sauce made with much sugar. The pulp of a raw apple, scraped with a silver spoon or knife, may sometimes be given for breakfast. Apples, cooked or raw, are particularly useful with a concentrated diet (beef broth, eggs, etc.), and if properly selected they are easily digested. As a rule, a child who is delicate and has little appetite for breakfast will rarely turn away from a juicy baked apple daintily served. For eating raw, a highly colored apple, with rosy, sugary flesh, is most digestible, if care is taken to see that it is properly masticated. Any really ripe apple may be used with safety if peeled and scraped. The juices of almost any fruit may be used at two and a half years, either as a drink or with the varieties of desserts or farinaceous foods allowed. Cherries, grapes, raspberries, strawberries, blackberries, pineapples, and similar juicy fruits are suitable for this purpose. These juices may be prepared in the following manner, and possess the advantage of being ready for use at all seasons of the year. Express the clear juice of the fruit in the usual way, and boil it with a small quantity of sugar, about a quarter of a pound to a pint of juice. Boil fifteen minutes, stirring constantly, and skim as long as any scum arises. Then strain, put in bottles or jars, and seal.

After a child is two and a half years old, stewed fruits should be freely used, especially apples, prunes, figs, and peaches. For many children all ripe fruits are laxative, and for this reason alone, if for no other, they are valuable aids in regulating a diet that is fre-

quently much too concentrated or too starchy, keeping a child dull, sluggish, and unhappy.

The following fruits may be used after three years and a half, according to the child's power of digestion. Cranberries, which rank as an antiscorbutic and an astringent, may be given in the form of a sauce or a drink. They should be strained when used in the nursery. To make a cooling, refreshing drink, boil the berries in water double the measure of the berries. Boil until the juice has been thoroughly extracted, sweeten with one-half pound of sugar to a quart of juice, boil ten minutes, bottle, and seal while hot. This must be largely diluted.

Strawberries are wholesome for nearly every one when fresh and ripe, if taken in moderation, but results must be carefully watched for individual idiosyncrasies. Some physicians recommend their use as early as two years and a half, but it is better to err on the safe side and "make haste slowly."

Dates and figs are highly nutritious, much more so than many other fruits, and in large quantities they are usually aperient. Children generally like dates when seeded, pressed flat, and served with a slice of buttered brown bread or saltine crackers.

Bananas are nutritious, but indigestible unless very ripe, when they are nearly all sugar, and it may be as well to postpone their use until children reach six years of age. They should be well chewed.

In this connection it may be well to mention some uses to which bananas are put. While awaiting my turn in the office of a prominent New York physician for children one day, I saw a mother, with a child ap-

parently two and a half years old, leave the house for a few moments, to get something, as she said, to quiet the child, who was crying. As she went out she remarked to the servant at the door that she had brought the child to the physician because he wasn't well,—wouldn't eat. She returned in a few moments, and the child was eating a so-called "ripe" banana. The skin was green. I felt impelled to send word to the physician to this effect, as her turn preceded mine, but I did not do it, nor can I tell why. I think the hopelessness of convincing such a mother prevented me, and both the child and the physician had my sympathy, for obvious reasons.

I have seen children only two years old munching away contentedly at dead-ripe bananas. One was the child of an Italian fruit vender, and she was the picture of health and content. Her mother assured me that the child ate them daily, and had never been ill. I questioned her closely, but could find no evidence of bad effects. The child was a sturdy little thing, and looked perfectly well. Reflection led me to believe that the secret of it all was that thrift would prevent her parents from giving her the sound bananas of market value, and the child was allowed to eat those only that were really ripe, and consequently she did not suffer as she would have done had they been otherwise. Really ripe bananas, being chiefly sugar, are easily digested, and under certain conditions are an excellent food. When not really ripe, they are extremely indigestible. A ripe banana in the tropics is an entirely different fruit from the banana sold elsewhere as being ripe. To those mothers who insist upon

feeding their children upon green bananas, the above remarks may be of interest.

Pears, when ripe, may be used carefully, but they are not to be preferred to other fruit for the first five years, as, in the opinion of many, they require a long time for digestion, and being decidedly laxative, if not properly digested, they are likely to give trouble. Peaches may be used from eighteen months up, when fresh and ripe and prepared carefully,—that is, pared immediately before eating. Dr. Rotch says a ripe peach, when in season, may often be given with benefit during the second year, especially if the infant is inclined to be constipated. They should always be pared for nursery use, as should every skin fruit, like the pear, apple, plum, etc. They must also be thoroughly washed before using. Diphtheria has been known to be carried by unwashed apples, and even if no contagion exists there is something decidedly unpleasant in the thought of eating fruit that has been handled constantly by unwashed hands from the time of picking, through transit, until it reaches the table. Even dates and figs suffer no appreciable loss by being quickly but carefully washed and dried over a range or in the sun, and they are infinitely more appetizing when treated in this way. Sterilized or boiled water should always be used for this purpose.

Grapes occupy an intermediary position, and may be used medicinally in many cases, under the guidance, however, of a physician. They are very rich in sugar, both in the fresh and in the dried form (raisins), and are easily digested when fully ripe. They are particularly useful in convalescence and in anæmic and catarrhal

conditions. The skins and seeds of all grapes must be rejected; the pulp, also, of many of them, chiefly on account of the seeds they contain. The pulp of Tokay, Malaga, and similar grapes may be eaten freely. Grape juice is especially refreshing, and is liked by all children. It may be given among the first fruit juices allowed. A pleasant way to prepare grape juice for young children is to use a fruit-press (a press that is used for mashing potatoes will answer very well), putting pulp, skin, and all into it and expressing the juice, which may be given clear or diluted for dessert or as a cooling drink in hot weather whenever and in whatever quantity desired. In this way some of the valuable ingredients of fruit may be added to a child's dietary long before the use of solid fruit is allowed. The use of these fruit juices corresponds, in the order of the menus indicated, to the use of the vegetable waters spoken of when making meat broths, which may also be used before even vegetable purées are allowed.

Blackberries are an astringent fruit, and they must be perfectly ripe to be eaten in their natural state. The usual blackberry in market is unripe, although black, and is unfit for food unless cooked. The berries are not sweet when in this condition, and if eaten they will easily cause a period of indigestion. A very good jelly may be made by using gelatin soaked in blackberry juice instead of cold water, in the proportion of a box of gelatin to a pint of juice, adding one cup of sugar and three cups of boiling water. Boil, strain, cool, and keep in covered jars or tumblers. This method, with the variations called for by the different fruits in the way of sugar, flavoring, etc., will be found

an excellent one for the use of all fruits. Cherries, pineapples, prunes, oranges, apples, grapes, raspberries, currants, and rhubarb are all to be recommended in this form. A further variation may be made at any time by adding the whites of eggs in proportion to the quantity made (as, for instance, two to four whites to one box of gelatin), beating the whites stiff, and whipping them into the fruit jelly a little at a time before it is quite firm. This may be eaten plain or with sweet cream.

Corn starch and blanc-mange may be varied by cooking them with fruit juices instead of milk, to be served with milk or cream.

The white of egg beaten very stiff and slightly sweetened, or whipped cream, either of them to be used with the addition of fruit or fruit jelly, is a dessert that is simple, easily made, and one that not only pleases the eye and palate, but possesses desirable nutriment as well.

Whilst the selection of a fruit or fruit dessert may seem the least important portion of the nursery menu, it does not occupy this position, as, if used at all, it must be considered in connection with the idea carried out in selecting the entire menu for the meal. We must always remember the rules to be followed in health in regard to proportionate quantities of food containing albuminoids, starches, fats, and sugars,—one supplementing the other. Under other conditions than those of health an entirely different plan must be followed, as special conditions call for specially directed nutrients, and at such times fruits and vegetables are not desirable, unless recommended by some one of unquestionable authority,—*i.e.*, the family physician.

CHAPTER VII.

Laxative Foods.

THERE is a constant demand among mothers for authoritative knowledge concerning the laxative foods and medicines that may be safely used in the nursery, and of methods that are calculated to relieve the actual state of constipation. One mother writes that she gives to her child a teaspoonful of castor oil every day with no permanent relief whatever, a result to have been expected, although she did not know it. A safe rule to follow in regard to castor oil is to give it only when it appears to be positively necessary to cleanse the intestinal tract of matter that is dangerous, as in cases of severe diarrhoea, cholera infantum, etc. It is then in all probability the first thing to do, but it should even then be given under a competent physician's directions if possible, and be purchased at a reputable pharmacist's. The prevalent abuse of laxative medicines cannot be too much deplored and inveighed against. Let mothers first watch the food of their children ; then see if it is assimilated, and if not, try to make it so by constant care and supervision. Experience will soon educate any ordinarily intelligent woman sufficiently to show her whether her child's food is being properly digested or not. If food is too concentrated, as in a milk, meat, or egg diet, there is little waste. This is

a frequent cause of constipation. By supplying the bulk in food required by the use of cereals, vegetables, and fruits, as indicated in dietaries, with a sufficiency of water to drink, this condition can usually be corrected. Use water freely, internally as well as externally, keep the children regular as to time for stool, and the cry for laxative medicines for nursery use will in all probability become a thing of the past. Nature has provided sufficient in food to prevent trouble in this direction; why not take advantage of the fact? Directions are frequently given very generally with no specific statement as to just what is to be done. Let mothers who have constipated children study lists of foods advised in well-known dietaries, and remember always that bulk in food, water,—an abundance of water,—and massage at the same hour every day (rubbing the abdomen gently for five minutes with the palm of the hand, using about a teaspoonful of warm olive oil) will frequently cure the most stubborn case of constipation.

Foods that are decidedly laxative and allowable for children are ripe peaches, stewed rhubarb, stewed or dried prunes, figs, dates, oranges, apples, oatmeal porridge, bran mush, Indian meal mush, whole meal bread, rye and Graham bread, all cereals made of the whole grain, tomatoes, spinach, boiled Spanish onions, etc. Dr. Thompson* says constipation may result from one or more of the following causes, which are related to diet:

1. Insufficient quantity of solid food.

* Practical Dietetics.

2. Too highly nutritive or concentrated food.
3. Insufficient fluid.
4. Astringent food and drinks.
5. Indigestible food.
6. Lack of digestive fluids.
7. Irregularity in diet.
8. Obstruction from overeating, especially in children.
9. Lack of peristalsis (movement of the intestinal wall).
10. Lack of exercise.

All vegetable and cereal foods, by supplying bulk, vegetable acids, and salts, help to correct this tendency. He advises the early use of fruits as wholesome and highly beneficial if taken in moderation, and he says that cooked fruits may be eaten with any meal, but when fruit is eaten for special dietetic purposes its effect is generally more pronounced if taken alone. Children should take it at the commencement of meals, or about half an hour before breakfast, with a glass of water. When used in this way the effect upon the bowels is more marked. Prunes, being decidedly laxative, may be used advantageously two or three times a day to correct a sluggish condition, giving but a few at a time, either dried, stewed, or freshened as directed in another chapter. Care should be exercised in selection, the largest fruit being the most desirable for several reasons, one of which is cleanliness, as any experienced housekeeper knows. Figs are also decidedly laxative, and if taken before breakfast, either stewed or plain, will often cure constipation.

“Molasses and honey added to bread are laxative.

“Gingerbread, especially for children, is sometimes efficacious.

“Grape juice is somewhat laxative.

“Olive oil or cod-liver oil, if taken at bedtime into an empty stomach, is laxative for some persons, especially children.

“With many persons having imperfect digestion raw fruits disagree, and since their laxative properties are not much weakened by being cooked, it is better to eat them in that form.

“A few fruits, like the banana, are apt to cause constipation.

“Owing to the prevalent idea that fresh fruit relieves constipation, patients occasionally eat too much of it, with the result of producing dyspepsia, and increasing their original trouble.”

Laxatives should be given to the mother when constipation in herself causes this habit in nursing infants. Water may be given to the infant as an aid.

Copious draughts of water are most important aids. If taken slowly, water may be taken in moderation with meals, and a sufficient quantity should also be given between meals, before breakfast and after supper. It seems to be a difficult thing to impress sufficiently upon those in charge of children the importance of the use of water. In one instance brought to the writer's notice, a physician was hurriedly called ten miles away at midnight to see an infant that was apparently very ill. He suggested giving the child some water to drink, which was done. The child slept, and there was no further difficulty. The mother said her physician had never even hinted at the necessity for giving an infant

water. This may seem incredible, but it is only too true that cases of this kind occur constantly. The physician takes it for granted that the mother's common sense would suggest the use of water to drink from the beginning, and, on the other hand, the mother waits for specific directions in every detail, and frequently follows only those that suit her convenience. One very hot day in July, when passing through New York, I met a mother with a crying baby, fifteen days old, upon an open street car. The child was simply suffocated. It had a veil over its face, a wool coat and cap, and an unbearable amount of other clothing upon its poor little body. I ventured to suggest to the mother that the child was crying from the heat. She looked surprised, said she feared it would catch cold, but she acted on the suggestion, took off the veil, unbuttoned the coat, removed the sleeves from the child's arms, and untied the cap. The child was quiet at once. I then asked her if she gave the baby water to drink. She looked surprised again, and said no. I told her a few simple things necessary for baby's comfort, and, saying, "That is good to know," she thanked me so gratefully that I became more than ever convinced that many mothers would do better if things were made more simple for them, that they might understand more readily without the mental effort to which many are unaccustomed.

Dr. Alfred K. Hills * says that water not only helps to clean the stomach of its contents and aid in the digestion of food, but when taken up by the blood-

* New York Medical Times.

vessels aids in normal nutrition, removes effete matter, and relieves congestion. He says the refreshing draught of fresh, cool water should not be withheld from patients ; that it should be constantly offered to them ; that in acute catarrh of the stomach there is no agent which gives so prompt and durable relief as water, sipped as hot as it can be borne. Many cases of disordered digestion are due entirely to lack of sufficient water. A baby should be offered water six or seven times a day. For older children, it should be remembered that water is needed according to activity and to bodily temperature,—the greater the activity the greater the need for water.

A child weighing forty pounds should drink at least twenty ounces of water a day, and hot weather calls for more. Let every mother impress thoroughly upon her mind the fact that if her child becomes constipated, she should endeavor first to correct the trouble by the methods indicated above, with the use of massage at a regular hour every day, and if necessary a daily enema of warm water containing a little salt, before flying to the relief offered by preparations that claim to be efficacious under all circumstances and conditions. A very forcible illustration of the inefficiency of so-called laxatives is brought to my mind in the case of a child who was treated medically for more than a year for what appeared to be stubborn constipation. It ran the gamut of all the best medicaments to be had, with no permanent relief. The mother eventually, in despair, abandoned all medicinal treatment, gave a daily enema of salt and water, daily massage at a regular hour, insisted upon a regular time for stool, saw to it person-

ally that the child had a bountiful supply of drinking water and laxative foods, such as are indicated, with the result of correcting a habit that never returned, and that at one time caused grave apprehension both upon the part of the mother and physician, whose reliance upon medicine instead of dietetics and hygiene evidently caused all the trouble.

CHAPTER VIII.

Nursery Desserts.

DR. UFFELMANN says that in constructing the diet of the child it is important to remember at the outset that it requires much less variety of food than do grown persons. No sweets or other delicacies are required to gratify the palate. The child at the breast receives the same food day after day, and only one sweet,—sugar. Children two or three years old thrive on a uniform fare of milk, bread, and meal, and the pleasures of the table do not agree with them. Dr. Mary Putnam Jacobi says these pleasures are not appreciated until much later in life.

Mothers, however, for varying causes, frequently meet with the difficulty of catering to a capricious appetite, the desire for change of foods, etc.; therefore if a simple dessert will tempt a child to eat a sufficient meal, it should, no doubt, be given, as with care it may be made to contain a large proportion of the nutriment required for each meal, and prove a valuable supplement to a child's menu. In reply to a query concerning ice cream for children, Dr. Yale says * that a great distinction is to be made between those who can and those who cannot eat sweets. He says, "There is a very large class of people who cannot safely eat

* *Nursery Problems.*

much of certain things (sweets, starchy food, including bread, potatoes, and many others seemingly harmless) without sooner or later suffering for it in some way. This group of persons are called the gouty. They are relatively more abundant among the head workers than the hand workers. The offspring of such persons early show this inability to dispose properly of sweets, and to such children even ice cream is not harmless. It is a natural desire to give pleasure to our children in simple gratification of their palates, and the rule we give to those asking advice is, 'See that the ice cream is of a really simple kind ; give it in small quantities at rare intervals, say at Sunday dinner or some other easily remembered time ; watch to see if the next two or three days are as free from indigestion or from fretfulness as other days, and from other evidences of disorder.' We speak at length regarding the ice cream because this involves the whole principle of sweet eating."

We quote at length from the same practical standpoint. If no sign of indigestion, such as acidity or flatulence, follows the moderate use of sweets within two or three days, they are harmless. Let it be noted that the mischief from sweets is not immediately observed.

It must never be forgotten in the application of food principles that the chief value of food lies in its digestibility, not in what it contains ; hence the need for careful observation of individual idiosyncrasies. It is impossible to give specific directions in any connection that would suit every case. Suggestions only can be given, and the intelligent mother will, in following

them up, be able to detect needs she might not otherwise have noted, and will also be able to supply them.

The following recipes have been tested, and may be used for any child in fair health, as soon as simple desserts are ordinarily allowed, which, under average conditions, is after two or two and a half years. For the earlier desserts, fruit juices, which are among the first to be given, have already been discussed.

JUNKET AND CUSTARDS.

Junket, made with essence of pepsin (Fairchild's), is one of the first solid desserts to be recommended, and it may be given at eighteen months, as it contains a large amount of nutriment, is easily digested, and is usually very acceptable. It can be varied for later years in several ways,—by the use of beaten raw egg stirred in the milk, or by using any flavor that is not acid. A baked apple is also one of the first desserts allowed. A sound ripe apple baked properly is an easily digested delicacy, taking but an hour and a half for preparation in the stomach for assimilation. It is nourishing, a stimulant, and altogether a food to be commended for nursery use, and it may be used as one of the first important changes when making additions to a child's dietary of milk and cereals. As stated elsewhere, Dr. Rotch allows it to be used from the fourteenth to the fifteenth month.

A very satisfactory way to bake an apple for nursery use is to peel and core it carefully, pour a cup of cold water over it, sprinkle lightly with sugar, cover closely, and bake until tender in a moderate oven. If carefully done, it should be as juicy and soft as jelly.

Among the lighter desserts are whipped cream and soft custards. These are easily prepared, and give sufficient variety until a child is three years old, when ice cream, rice pudding, orange float, tapioca, farina, and the various milk puddings may follow in their order.

The chief point to remember in the selection of desserts is that when the child has a full menu for the earlier part of the dinner—*e.g.*, meat or broth, one cereal (rice), one juicy vegetable (purée of spinach), and bread and butter—a fruit or a light dessert is called for. But when for unavoidable reasons the main part of the dinner is light, as, for instance, bread and butter and beef broth, a substantial dessert should be chosen, —*i.e.*, rice or tapioca pudding, milk jelly or cup custard, all of which contain the constituents of a varied diet, and thus supplement what would otherwise be an insufficient meal. When carrying out this idea, eggs should be added to the milk puddings, omitting them when lighter desserts are needed.

Soft or cup custards may be made white or yellow by using or omitting half of the egg. They may also be colored and flavored with fruit juices, as cherry, prune, raspberry, etc. The proportions for a white cup custard would be the whites of three eggs to a pint of milk, and one or two whole eggs for the yellow for the same quantity of milk. When using fruit juices for custards take less milk in proportion to the quantity of juice used. Always use hot milk when adding the sugar and salt, and for a soft custard stir in a double pan or boiler until it thickens, using more milk than is called for in a recipe for cup custard. A

soft custard should boil three minutes. A cup custard should be poured into cups, set in a pan of hot water, and baked twenty minutes in a hot oven.

Gelatin may be used in the nursery in a variety of ways. Dissolve one-half box in one pint of water, one-half cup of sugar, and one-quarter pint of fruit juice, using lemon and orange, currant juice and lemon, prune juice (one pound of prunes to a quart of water boiled to a syrup), grape juice, blackberry syrup, or one made from cranberries, remembering the astringent properties of both blackberries and cranberries and the laxative quality of prunes. Boil the mixture, with whatever flavor, strain and cool on ice—covered, as gelatin readily absorbs germs, odors, etc.

Plain jelly made according to these directions, flavored with orange, vanilla, or lemon, and whipped with cream before it is quite firm, is a delicate and appetizing dessert.

Whipped cream flavored with prune juice, or with a small quantity of dry cocoa, is another dainty dessert.

Grape sauce, or jelly made with gelatin, is especially refreshing to convalescents.

A simple fruit jam, made without the seeds or skins of the fruit, may be used occasionally with bread and butter for children over three years of age.

As mentioned before, these desserts can be easily made by any plain cook. The value of the suggestions lies in the variety that may be given to two seemingly conventional desserts,—custard and gelatin.

Milk puddings may be equally varied by using a little judgment, a little experimenting, and by choosing simple, sweet ingredients, such as tapioca with fruit,

rice with or without eggs, barley flour with orange flavoring, bread crumbs or bread soaked in milk with chocolate or apple and eggs added, etc.

Irish moss, dissolved and used with corn starch, made into blanc-mange is a pleasant change. Add chocolate to the ordinary recipe for blanc-mange, and serve with sweet cream, for another variation.

Milk jelly is the only dessert mentioned that may not be generally known. It is said to be retained by the most sensitive stomach, and will nourish when almost nothing else will be tolerated.

Heat one quart of milk, then add and stir until dissolved one pound of granulated sugar; add an ounce of gelatin dissolved, and allow the mixture to boil for ten minutes. Before straining and cooling, add the juice of three lemons or any flavoring desired. Pour into cups, cover, and keep in a cool place.

With the varieties suggested, and the long list of stewed fruits and fruit juices that may be used, it seems incredible that mothers will persist in feeding their little darlings with sweetmeats, doughnuts, cookies, heavy rich cakes, preserves, and canned fruits, even, as the writer has seen, going so far as to give them tea and coffee, with no consideration whatever for the delicacy of the child's digestion.

CHAPTER IX.

Summer Diet.

AT this season of the year, if at no other, should excellence in the preparation of simple foods be the rule, more especially for the use of children. Elaboration should give way to simplicity; indeed, in the nursery elaboration should never appear. A steak or a chop perfectly broiled, well-baked bread, pure milk, heated or modified as required, carefully selected fruit, vegetables that are well chosen and properly prepared, and the avoidance of sweets and pastry, will prove potent factors in carrying a flock of little ones safely through the hot months of July and August. As I have frequently said, too much attention cannot be given to the care of milk, heating at 167° F. being the only safe plan, and one not to be lightly set aside from considerations of convenience. This is imperative for nursery health when the ordinary milk-supply must be depended upon, as scarcely a month passes that we do not hear of an outbreak of diphtheria, typhoid or scarlet fever, etc. With the additional dread of tuberculosis and cholera infantum in summer, mothers who take the precaution to follow the above plan may rest assured of at least one point as to summer diet,—namely, that the milk which is or should be the base of the greater portion of nursery food is sweet and safe to use for a child of any age.

Proper preparation of milk is equally important at

this period. It will not do to risk the dangers of cholera infantum by lack of care in this direction. The basis of human milk must be reached in some way for very young children. Analyses have shown how this can be done, and there is no longer any reason why an infant's chances of death in summer should be so great as they have been.

Physicians may now be found in every direction who pay especial attention to children's diet, and who will gladly show any mother how she may safely reach the basis of human milk. It is to her discredit if she does not take advantage of this fact, notwithstanding the usual advisory remarks of her neighbor as to giving baby undiluted cow's milk, etc., because she did and because her mother had done so before her. Such an adviser never mentions the periodical attacks of indigestion constantly met with, especially during the much-dreaded and taken-for-granted second summer, which need not be the bugbear it is if attention be given to an infant's needs in regard to pure and properly prepared milk and other foods, to hygiene, and the use of sufficient water. It seems necessary to iterate and reiterate the facts connected with the use of water in infant feeding, as it is a feature that is too frequently underestimated. Many a child's suffering has been relieved by a few teaspoonfuls of boiled water that has been cooled (not iced), and given at frequent intervals during a hot day. This should be the rule, not the exception, from birth. Children a few years old need a great deal more; a pint a day is not too much for a five-year-old child, and during very hot weather, when perspiration is excessive, the need is even greater.

Another point to remember at this season is that a child is overfed if it cannot digest its food: hence if there is trouble of this kind either the food should be changed, or the child should not be fed at all for a short time, according to its condition. Frequently, after a meal has been omitted and a concentrated, easily assimilable food been given instead, as, for instance, a cup of peptonized milk, all signs of trouble will vanish. The use of this milk in summer must be emphasized, for many reasons. It may not be possible to procure laboratory milk; the Fairchild process is easy, and for convalescents and ailing children it is an invaluable aid. There is every reason in favor of its use for infants who must be fed artificially from birth, when laboratory milk prescribed by a physician is not to be had, as it resembles very closely the natural food of which the child has been deprived, and it does away entirely with the use of the pernicious, starchy, so-called infant foods that flood the market. The approach of warm weather always brings to the thoughtful mother the consciousness of increased care, as this is the season requiring the exercise of much forethought in regard to the diet of the little ones. This is particularly true in regard to food for older children in the summer-time, a trying period for the one who provides, not so much in finding variety, as in being able to make the proper selections from the tempting supply of fresh fruits and vegetables offered, and in discarding the foods that are unsuitable for the hot months. Oatmeal, the reliance of many for breakfast in winter, must now be frequently discarded, as it often proves too heating. It may occasionally be used, however, in the form of oat jelly for children

who are very fond of oatmeal, as some will not eat hominy or wheat. The latter is a perfect summer cereal if well cooked, and efforts should be made to teach children to eat it by preparing it in an appetizing manner, serving it daintily, etc. As eggs may be used but two or three times a week, the breakfast menu in summer taken all together is the first stumbling-block, and one likely to give trouble if not considered carefully. Almost all children, especially those of a nervous temperament or an anæmic type, are better for having had a hearty breakfast and one of sufficient variety to tempt the appetite. If mothers will step out of the beaten track and provide dainty dishes that are not looked for at this hour, they will be surprised to see how quickly their efforts will be appreciated. In season, for children over five, a few sound, perfectly ripe strawberries (only four or five), with the hulls on,—the berries should be sweet enough to eat without sugar,—or half a dozen large cherries (oxhearts), perfectly ripe, laid upon the fruit-plate for the beginning of the meal, followed by dainty slices of well-baked, whole-meal bread and butter, and half a dozen asparagus tops that have been boiled tender in salted water, with a glass of cold or warm beef tea as preferred, and a spoonful of well-boiled and well-seasoned rice, will make a most satisfying and appetizing variation from the usual menu of eggs, oatmeal, potatoes, etc., and it will be one that a child will be sure to enjoy.

Dainty serving is one of the most important adjuncts in nursery feeding. If the fancy of a child is pleased, he will, in all probability, eat most heartily. On a very hot morning I frequently find that I can

invite sufficient appetite by building engines or toy houses, etc., of small pieces of bread, well buttered with *cold* butter. A little lump of butter is placed on each piece of bread, not spread on in the usual nursery style, which, to say the least, is not inviting; a very few crisp bits of fat broiled bacon may here and there take the place of butter. This may all be put upon a decorated plate to suggest a story to the child. I have often seen a delicate child, one of the kind who would rather play than eat, take unconsciously a satisfactory meal while he was being entertained with an interesting story about a dear little cherub on his plate who was pictured as eating an apple. I have seen this same child drink glass after glass of milk when it was served in a wineglass with a stem, whereas he would invariably refuse milk if it was given in a cup or a tumbler, saying he was not hungry. There is a fitness of things that must be considered when feeding children, and at no time is it more necessary than in summer, when the intense heat tries the temper even of adults, who are certainly more resistant than children to the various climatic changes to which we are usually subjected.

A cool-looking dining-room, shaded to rest the eyes, with inviting napery and pretty table appointments, flowers, etc., is inseparable from comfortable summer life. What could be more inviting to the eye, as well as to the appetite, of a fretful child who has probably been awakened too early by the heat, or who has passed a restless night for the same reason, than the sight of a prettily laid breakfast table,—flowers, fruits, and some little surprise at his plate to charm away his languor? A dish of cold snow pudding, which con-

tains ingredients that are all beneficial for a child (gelatin, eggs, fruit juice, etc.), will work like a charm. A glass of milk and a few dainty fingers of bread and butter will complete a satisfactory breakfast for hot weather. It is well to remember in midsummer-time that a light early breakfast is preferable to a heavy later one, if it is supplemented by a glass of milk or of beef tea, with a few crackers or a piece of zwieback, to be given midway between breakfast and dinner. Beef broth or cocoa should be given instead of milk to drink when cherries or strawberries are taken at breakfast. When cherries are given, they must be in perfect condition, and results must be carefully noted. Unless stewed, they are frequently not a safe fruit until after second dentition.

Tapioca is of great value in summer diet. It may be used in a variety of ways for any meal in the day, either for dinner dessert or for the main portion of the breakfast or supper meal.

During very hot weather meat should be sparingly used ; broths, eggs, milk, and macaroni should take its place. Baked potatoes and rice are preferable for starchy foods at this season. Rice possesses no fat, and potatoes are nearly all water.

Great care is necessary to cook potatoes properly. As stated before, they should be baked in a very hot oven, one that is hot enough to bake a potato of moderate size in half an hour if possible. Rice also should be subjected to steady rapid boiling for thirty minutes, then treated as directed on page 94, so that each grain may be double its first size and distinct from every other. The pasty concoction served frequently to chil-

dren as boiled or steamed rice is an abomination, and not to be tolerated in any well-regulated nursery.

For dinner menus in summer use well-made broths and soups, an occasional chop, a tablespoonful of scraped beef pulp that has been lightly broiled, or a piece of fish, broiled, boiled, baked, or creamed, never fried, preferably broiled, remembering to give broths and fish more frequently than meat, and using well-boiled macaroni or spaghetti with a dinner menu that is minus meat, and rice and potatoes with broths and fish. Fish, to be useful in the nursery, as stated elsewhere, must be fresh and of the right kind. Being less stimulating and more easily digested than meat, it may be used frequently during summer. Only the white-fleshed fish should be used, and the flesh should be firm and hard. For variety, it may sometimes be creamed as directed on page 82, and served with white sauce in which beaten egg has been stirred. A piece of broiled or creamed fish with good bread and butter, a little honey, and a glass of milk will make a satisfactory and easily prepared dinner for a hot day, supplying every constituent that is needed. Another equally desirable, easily prepared summer menu is a spoonful of broiled scraped beef, with steamed or boiled rice over which a fruit juice or a vegetable sauce or purée has been poured. This, with bread and butter, will give a very simple yet satisfactory meal. Children frequently enjoy having only one or two dishes at a time, especially if they are favorite dishes. It requires very little forethought to select menus that will give them what they like, yet at the same time what they require. It is a mistake to suppose that children desire during their earliest years

a great variety of food at every meal ; nor do they need it. A little observation of their manner of receiving the announcement of a new dish, as compared with the shout of delight upon the appearance of an old favorite that has probably not been seen for several days, will demonstrate to any mother the truth of this assertion.

During hot weather it is well to remember, for many and obvious reasons, to give less variety at a time, and to have the articles well prepared and well combined, not in the least neglecting the use of foods containing salts (fruit and fresh vegetables). For dinner menus in summer, use meat, fish, and eggs alternately, never together ; with them use one starchy food, as baked potato, rice, spaghetti, etc., and one food supplying salts, either fruit or vegetables, sometimes giving the latter class of food as directed above, in the form of a fruit sauce or vegetable purée over rice, etc. When constructing summer menus select broths instead of meats for use with macaroni or spaghetti, which are part proteids, but in menus calling for starchy foods like rice and potatoes, select meats and fish (proteids) alternately, and complete both menus with some salt-giving food (fresh vegetables or fruit). A vegetable purée is an especially desirable summer food (page 88). Blancmange may be made from farina, from wheat (cooked very soft and pressed through a purée sieve), from rice, tapioca, or gluten. When served with fruit juice or sauce, it makes a pleasant change, and one that is usually enjoyed by the little ones.

Avoid at all times, but especially in summer, the use of sweets that are cloying, over- or under-ripe fruit, stale vegetables, and too much meat. Carbo-

hydrates (sugars and starches) should be given in the proportion of four to one of proteids (meat, eggs, etc.). When corn is young and tender, a corn omelet, with bread and butter and a glass of milk, makes a satisfactory dinner for a hot day. Score the grains of corn through the middle, and press out enough pulp to flavor an omelet. Use the recipe given elsewhere for a tender omelet (page 172), putting in the vegetable pulp just before folding, as it requires but a few minutes for cooking. Do not allow the omelet to get dry. It should be moist and soft when served. This is delicious when properly cooked and well seasoned. Purée of stewed onions, or a teaspoonful of raw onion juice, or grated onion, or any other vegetable allowed in the nursery, may be used instead of the corn pulp for making these omelets. This plan of only one or two dishes for dinner should not be followed continuously. It is suggested for the occasional relief of the busy mother who at this season of the year finds herself overtaxed, and she must receive her due share of consideration in all these matters, as a child's well-being, not only physically but mentally, depends upon the mother's condition. An occasional use of this plan prevents satiety also upon the part of the child.

Macaroni or spaghetti, boiled tender first and then simmered in beef broth, cream, or milk, is a perfect one-course dinner for a child, and one that is usually appreciated. A glass of milk and bread and butter should be given with it.

Desserts in summer may frequently be supplementary foods. By this I mean that eggs, rice, tapioca, milk, etc., may be freely used in desserts, and this portion of

the meal may contain a large share of the nourishment required for the entire meal. In this form these ingredients are easily digested, and the other part of a menu containing one of these desserts need not be so heavy as in cold weather, thus somewhat relieving digestion at a time when relief is required.

What to give to the children for supper, especially in summer, may seem a trifling matter, yet it is really of the utmost importance. A child's rest at night depends very largely upon what it has had to eat at this meal. Two safe rules to follow are, never to give a heavy supper, and never, if possible, to give it later than five or half-past five o'clock, until a child is six years old, thus leaving an hour and a half to intervene before it is time for the nightly sponge, which is so refreshing before bedtime in hot weather, and which, with a well-selected supper, induces sleep in defiance of the heat, however oppressive. I find it is not unusual for mothers to give the evening meal to their little ones as late as half-past six or seven o'clock, in some instances as late as half-past seven, for their own convenience, and yet they will visit physicians regularly and ask advice as to what should be done to make their children sleep soundly, complaining that they are restless, wakeful, easily disturbed, etc. A child who has had a simple and early supper will be found, if well, to protest against being disturbed, and will want to sleep. It is possible and very desirable to give even a baby its ten or eleven o'clock bottle, which should be its last feeding for the night, without thoroughly awaking it (page 163), thus encouraging the habit of continuous sleep from seven to seven, which once established is the greatest boon that

a tired mother can ask, and is of equal benefit to the child.

Sleeplessness or disturbed sleep in a child either points to a faulty regimen or is the forerunner of disease, and it invariably needs attention and correction. It is one of the safest indications for the mother who is concerned as to the condition of her child.

The old-fashioned bowl of bread and milk cannot be improved upon for a child's supper, if the milk be sweet and the bread well baked and made of good flour. A half-dozen prunes added, stewed or freshened as directed on page 173, will make as satisfactory a supper as it is possible to find for a child over two and a half years of age. Graham crackers in place of the bread, with clarified apples made according to the recipe given, is another simple yet desirable summer menu. An occasional dish of rice and milk or a baked potato is frequently suggested, and may be admissible, but it is much wiser in hot weather to reserve rice for breakfast—to be used instead of the more heating cereals—and baked potatoes for dinner. With well-cooked rice or wheat for breakfast, potato, macaroni, or spaghetti for dinner, and the occasional use of farina or tapioca, the matter of starchy foods in summer should be pretty well covered, leaving supper menus to be supplied with dishes that are more simple and more certain of not disturbing a night's rest.

The use of stewed fruit is to be advocated for all times and all seasons of the year, after two and one-half years, and if fruit at all be given at the evening meal, it should be cooked. Fresh fruit should never be given to children after dinner. I have frequently

heard this question discussed, and many mothers are in favor of giving it later in the day, but I cannot alter my opinion that fresh fruit should not be given to young children later than at the one o'clock dinner. There is no necessity, at any rate, for doing so, as any child, if treated wisely, will care far more for his bread and milk or Graham crackers and milk than for all the fruit you may offer him. I frequently find that even the dish of stewed fruit is not appreciated as much for supper-time as for breakfast, at which time it is often eaten with great relish and is usually the first dish to be called for. Since the discovery of this fact, I have often changed my nursery menus in this direction, omitting the use of any kind of fruit at supper-time unless it is asked for, and giving stewed fruit for breakfast, reserving fresh fruit for dinner menus in summer, when little meat or fat is taken. In this way I find it easier to fit it in with the different milk dishes, which sometimes cause trouble when used with fresh fruit, and thus there is less likelihood of consequent disagreement. At the risk of being tedious, it seems advisable to lay stress upon points like these, even if they do appear to be self-evident. Milk should, for instance, form a large portion of the breakfast menu, and with the use of milk it is usually very much better for children under five to have stewed fruit instead of the average so-called ripe fruit that is sold so often in our markets. For this reason chiefly I prefer using at breakfast-time fruits that have been stewed, as less likely to cause trouble, and fresh fruit that is really ripe for dinner, when milk is usually omitted from the menu. This rule is not an inflexible one, however,

and any mother who is sure of the condition of the fruit she buys—that it is perfectly fresh, sound, and ripe, not over- or under-ripe—may follow the usually suggested plan of fresh fruits for breakfast and stewed fruits for supper, with puddings, etc., for desserts for dinner. I have, however, found the other plan perfectly practicable, and a great relief in hot weather.

A pleasant addition in summer to a supper of bread and milk, or to a glass of milk, for a child over a year old, is a tablespoonful of Mellin's Food, stirred into the cool milk, where it will not dissolve, and will please the palate, inasmuch as it tastes like molasses candy. It is a valuable but somewhat expensive supplementary food for growing children. I have frequently seen two children of five eating it dry with as much enjoyment as I have seen others show when eating candy, and certainly it was with less detriment to themselves than if they had been indulging in the use of what should have small place in nursery dietaries, —*i.e.*, candy. An ideally trained child of three or four should know nothing of the existence of candy as candy, but in these days of careless nursery-maids and equally careless friends and relatives it is difficult for the most careful mother to protect her little ones, and it is not unusual to see even a two-year-old child with sticky face and fingers and the inevitable stick of candy, the panacea for all ills. When the abuse of candy as a bribe in training children is fully comprehended by our nursery and educational reformers, they will be sure of one of the causes of certain results deplored, and know at least one way in which to direct reform.

A copious drink of water about an hour after supper is an important feature in regulating a child's condition, and it should never be neglected, especially in summer. A child four or five years old should drink at least half a pint of water between five o'clock supper and seven o'clock bedtime. The habit of drinking water both morning and evening can be cultivated with a little care, and it is a habit of great importance throughout life in its result upon sluggish conditions. That this fact is not fully appreciated is evidenced by the constant cry in the nursery for laxative medicines, which are used and advised far too frequently.

SIMPLE SUPPER DISHES FOR SUMMER AND WINTER
ALIKE.

(After two and a half years.)

Milk toast, zwieback, bread and milk, bread and butter (home-made bread, one day old), sugar rusk, Graham crackers, Graham cracker sandwiches with good butter (nothing else) between, stewed prunes, stewed apples, etc., if desired, with as much sweet milk as the child will drink or use with the above.

CHAPTER X.

Travelling Outfits and Precautions.

How to keep children strong and well under conflicting circumstances is one of the questions constantly met with, thought about, and talked over by interested mothers. It is comparatively easy to find out just what is the right thing to do, but very frequently it is extremely difficult to do it. One mother without a servant, for instance, might like to sponge her child of three before putting it to bed at seven, but this happens to be the time she is obliged to devote to the preparation of her husband's dinner. What is she to do? Another mother knows her child would be the better for a morning sponge before breakfast, but it is impossible to give it to him, as she must prepare this meal for the remaining members of her family; and so on *ad infinitum*.

These are but common illustrations of what is met with every day, in every direction, and in these days of children's rights there is much to be said upon the mother's side. She owes it to her children as well as to herself to keep perfectly well. They will need her influence more and more the older they grow; therefore, if circumstances prove too strong at times to allow for the ideal care of children without the sacrifice of the mother's health and well-being (mental wear and tear being considered as well as physical), by all

means let the children when in average health take their share in the sacrifices that must be made. Delicate children, and those who are ill, it is obvious, cannot be considered in this connection, as everything must be made subservient to their needs for the time, but when children are well, let them help make the burden lighter ; for burden it undoubtedly is for many mothers who are physically weak, and who may have no relief from one year's end to the other, or have spasmodic help at best. A little wholesome neglect as to a child's dress and as strict adherence as is possible to method in sleeping and feeding will help to ease the mother's way, and will prove wonderfully important factors in making the work less laborious when several children are to be cared for by one pair of hands.

At no time does there seem to be so much difficulty in adjusting circumstances as when travelling, and as under the best regulations in the nursery it is sometimes necessary to travel with very young children, it may be of interest to consider the comfort of what might be called an emergency travelling-bag, so designed, with the contents well considered as to possible needs, that it takes up very little room, is not too heavy to handle constantly, and, above all, is the greatest possible convenience a mother can have under trying circumstances. In this bag it is advisable to carry a few simple home remedies, such as a small box of mustard, a box of mustard leaves, soda mint tablets, a bottle of white vaseline for chafing, etc. ; lanolin for head and chest colds ; gluten suppositories or a bottle of fluid magnesia (to be used only when absolutely necessary, according to the age of the child, a tea-

spoonful of magnesia for an infant, or a suppository for a child of older years); chalk mixture for diarrhoea; a vaporizer and benzoinol for catarrhal colds, a hot-water bottle, and, above all, a fever mixture that has been tried and found efficacious, and is suited to the age of the child. Although these articles are easily procured at almost any place, it is better to carry them along, as they take up little room, and when needed they are wanted instantly. Sudden indispositions and the first symptoms of illness are what a mother must prepare for at all times, whether at home or travelling, that she may be able to act promptly whilst waiting for the arrival of the physician, who may be beyond immediate reach. For this reason it is well to pay special attention, for a long journey, to supplementary foods, to be taken, with a sufficient supply of prepared milk, in this bag of comfort.

The independence given by a small alcohol lamp and a pint aluminum cup for heating milk or water will never again be underestimated by any mother who has tried carrying these things with her when travelling for any distance, or when away from home for even a day or two. For a day's journey with, or a day's absence from, a bottle-fed baby, milk that has been prepared for the purpose at a milk laboratory, such as may be found in Boston, New York, or Philadelphia, should be provided if possible; but, if not attainable, it is practicable and convenient to prepare in the morning enough feedings of milk, using peptogenic milk powder, to carry the child safely through the entire day. For a longer journey, when fresh milk can be procured every morning or at short intervals, this process of pre-

paring milk may be followed whenever necessary or convenient if the milk powder and lamp be carried along. This powder is useful also in cases of sudden attacks of indigestion or bowel complaint, when peptonized or partially peptonized milk should be the only food until a physician is available. It is also a safe and satisfying food for travelling convalescents or delicate children. When it is impossible to get fresh milk to use with the powder or to get the laboratory milk, take a sufficient number of bottles of prepared top milk,—done by the higher temperature of 190° to 212° F., that it may remain sweet for the time required,—allowing room in each bottle for the addition of the hot water needed, which will warm it sufficiently for use. A physician should direct as to quantity for dilution. The water should be heated over the alcohol lamp (boiling it to be sure it is pure), and be added with the milk-sugar and lime water required at the time of feeding. The use of top milk supplies the necessary cream, which is difficult to get when travelling. When undiluted milk is to be given to older children, it is only necessary to place the bottle very carefully in the cup of heated water until the lower portion is quite hot; then, on shaking the bottle, the milk will be found to be of the required temperature.

Another source of difficulty in travelling is to keep the nipples sweet. The seamless nipples alluded to elsewhere will remain sweet under all ordinary circumstances. They can be washed as clean as a glass or a cup, for the surface is very smooth.

In this manner, with very little trouble, a mother may travel quite comfortably with a young baby. By

having and using her own appliances she is independent of indifferent hotel accommodations in the way of food, and, above all, she is freed from the use of "refrigerator" milk. By this I mean milk that has been standing all day, possibly uncovered, in a refrigerator that is generally lacking in point of cleanliness, and which contains a variety of foods, each contending with the other for prominence in the flavor that is being given to the milk. At one time, in the dining-room of a very well known New York hotel, I ordered some milk toast for my boy's supper. When it came it gave evidence of milk having been used that was on the point of what is usually termed souring, the curd having separated during heating. The milk had, of course, reached a condition that was unsafe for a child's food long before it was used for the purpose I called for, yet I had taken the precaution to interest the waiter sufficiently to see to it personally that sweet milk should be used. I then ordered a glass of milk to be served scalding hot. This time the milk was sweet; yet I was assured that it was taken from the same supply for both purposes, which was manifestly untrue.

When children are old enough to go to hotel or restaurant tables, it is advisable to have all milk that is served to them brought upon the table steaming hot. Let the little ones wait, even if hungry, until it has cooled sufficiently for drinking, and you will have the satisfaction of knowing that it is at least a comparatively safe food. Early in the day it is reasonably safe to depend upon the usual supply, if care is taken to have the milk served hot, but later the danger of

contamination is always present ; hence for travelling children, who should always be carefully fed, it is advisable to be prepared for emergencies by carrying a sufficient quantity of prepared milk. Some years ago, when going to a hotel in a vicinity where I was uncertain of the milk-supply, I took with me twenty-seven bottles of prepared milk perfectly fresh when heated. These bottles were packed in a tin bath-tub and carried safely. I was thus able to take time to find sweet milk for our daily supply, and also incidentally to feed a few hungry babies who would otherwise have gone supperless to bed, owing to the souring of the hotel supply upon which the mothers of these babies had depended. Precautions like the above give very little trouble, and the comfort they bring in their train is ample compensation for the small amount of labor involved.

When travelling, avoid the free use of fresh fruits and vegetables for children who have reached the age to take them when at home. The safest menus, and those least likely to cause trouble, may be selected from foods like bread and milk, eggs, cereals, stewed fruit, and broiled chops or steak for breakfast,—crackers or bread broken into hot milk for supper, allowing stewed fruit or bread, butter, and molasses, with milk to drink, for older children, and for dinner a chop or bit of roast beef, a baked potato, if mealy, and well-boiled rice or macaroni, with a perfectly ripe peach, apple, or some other wholesome fruit for dessert. These are usually safe foods, and are easily procured, as a rule ; but if by chance you cannot get them, fall back on your emergency bag, which should contain Graham or educator crackers and prepared milk, which will make an all-

sufficient breakfast or supper, and a bottle of some good beef juice preparation and a small bottle of Zinfandel or Muscatel grape juice, which, with bread and butter, will help the little ones along very satisfactorily for dinner until it is time for another trial of the fare offered as good by some affable landlord. Whilst not being a full menu, it is at any rate infinitely preferable to giving the child just what happens to be procurable, whether it be baked ham or fried egg-plant. Incredible as it may seem, I have heard of children of three eating these things. I have also seen them drink beer, and have been looked upon in the light of a faddist for protesting where I was not properly introduced. Adults may, and will, take dietetic risks, but it is hardly safe to allow the little ones this liberty. The chances are that bitter regret will follow such indulgence.

The use of ice water, and the eating of candy and cake between meals, are sources at all times of much mischief, but especially when travelling. Why the ordinary traveller rushes immediately for the water cooler, as I have seen him do scores of times, is beyond my ken. The ice-water habit is one of our greatest evils in a dietetic way, and with so glaring an example on the part of adults, why should we wonder that the children want to do likewise? They must be taught to abstain. Boiled water cooled on the ice and left covered in a convenient place within reach of the little ones will soon be taken in preference, at home, with but little care upon the part of the mother to establish this habit. For use on the train, a bottle of properly diluted grape juice will be very refreshing, and it will occasionally prove a valuable supplementary food to a

restricted dinner menu, supplying the necessary salts so frequently omitted from the ordinary bill of fare.

A word of caution about the use of drinking glasses provided on trains, etc. They should never be used, as too many evils follow. A small graduated glass should be taken along, as it occupies little room, and is useful in many ways.

The above suggestions embody but a few of the many ways in which a mother may anticipate her needs when she expects to be beyond immediate reach of the various comforts and necessities that serve to make a complete nursery. Every case needs individualization, but let it be remembered chiefly, when travelling, that possible contingencies requiring immediate action are the things to be provided for, according to the conditions existing for the child or children under consideration.

CHAPTER XI.

Fat in Food.

DR. JACOBI very wisely remarks that to understand only a small part of what is known on the vast topic of the development of infant life the mother must consult not one little volume, but many big books. If parents desire normal development,—*i.e.*, sound teeth, strong bones, good digestion, firm flesh, and ruddy color,—let them not neglect the use of the proper constituents of food during the least resistant period of a child's life, when many “so-called” children's ailments develop.

One phase of this subject that should be more frequently considered than is usual is in regard to the use of fats in food for infants and growing children. According to all leading dietists, fat plays a most important part in nutrition. A pound of fat gives nearly two and a half times as much heat and power as a pound of protein (eggs, lean meat, etc.) or of carbohydrates (sugar, starch, etc.). This heat is necessary for the growth of the tissues in the baby's body, and when fat is mixed with proteids in the stomach, as in the form of cream with the caseine of milk, digestion is made easier.

As a result of experiments made in regard to the addition of fats to dietaries, tissue-waste is shown to be lessened, and fat may therefore be regarded as an

“albumen-sparing” food. Bauer says, “If flesh alone be given, large quantities are required in order that nutrition and waste may balance one another, but if fat be added, the demand for flesh is less.” These statements will suggest to the mother the importance of its use for young children, to whom little meat is given, and who need much heat-giving food to maintain body temperature and provide a reserve of force-producing material to meet the demands made by their constant activity and rapid growth.

If either the various formulæ given by physicians for the modification of milk for infants, or the constituents of many proprietary infant foods, are studied, they will be found to indicate almost invariably the use of fat in the form of cream. This is usually insisted upon as an absolutely necessary ingredient, and it is done because analyses have shown that mother’s milk contains fat in a certain proportion to other ingredients, which is one reason for the modification of milk; hence it will readily be seen why infant foods call for fat. Unfortunately, the majority of proprietary infant foods endeavor to reach a resemblance to mother’s milk in this particular only, of which more is said in another connection. Burnet speaks of the fatty constituents of food as being wanted in one type of children,—the slim and thin, with a strong dash of the nervous in their composition. In these cases there can be no doubt of the value of the use of an easily digested fat.

The use of cod-liver oil is frequently suggested as a convenient method of adding fat to a child’s dietary. It is said to be a food rather than a medicine, if ac-

ceptable to the palate, and it is not often that children will refuse it. Many instances might be given showing how they have learned to like it sufficiently to relish it. In one instance brought to my notice, a boy of four, when suffering from a head cold, would frequently sit up in bed during the night and call, "My nose is tight; I want my coddy," so great was his reliance upon this simple medicine. When in the form of an emulsion, it may be more pleasant to take. Inasmuch as a medicine, however simple, is useful only when properly used, it is necessary to know under what circumstances to give it: hence in this connection, as in nearly all other particulars concerning the health of children, a physician's advice is necessary. Professor Fonssagrives indicates its use during the most active periods of growth in children, when care and precautionary measures must be redoubled. He says that mothers should feel anxious over impetuous development, which is never devoid of danger; that the manner in which a child's growth progresses is an excellent measure of the strength of his constitution and of the wisdom of the hygiene to which he is subjected; that perfect harmony should be maintained between the various organs if possible, and even if difficult to accomplish the effort should be made. He says expenditure of force should be moderated and resources increased when rapid growth is noticeable, muscular activity be restrained, and very active kinds of exercise be replaced by those more passive; that more than the usual amount of sleep should be taken; that good and substantial food should be provided, aiming at nutrition and assimilation by giving plenty of air and sunshine;

and that a sojourn in the country and cod-liver oil are precious resources at such a time, if possible to be had. The use of the oil does not usually interfere with a plentiful supply of milk. It is always well to allow short intervals in its administration, and it is advisable to give small doses at first, as one spoonful well digested is better than four spoonfuls not digested. It should be given either with or about an hour after meals. The latter is the best time theoretically, as digestion has then so far advanced that the oil will not be retained in the stomach, but will be passed on to be digested with other fatty constituents of food. When taking it, a child should exercise and be in the open air if possible.

The use of fat, in the form of good cold butter, sweet cream, or good olive or cod-liver oil, is indicated in catarrhal conditions. An easily digested fat moderately used during all seasons of the year except summer and the warm days of spring and fall produces a resistance to colds in our ever-varying climate, and occasions no disturbance if given with care. Olive oil may be supplied very pleasantly with salads, but it should not be used in this combination before the school period of life,—*i.e.*, from eight years to adolescence. Fat in the form of cream in food for infants is so generally advised that it need not be considered in this connection. Dr. Rotch has suggested cream as a desirable fat for children of all ages, and under certain conditions as preferable to any other fat. It is certainly the most agreeable form in which fat may be prescribed for children, as is shown by the readiness with which it is usually taken. Care must be had, however, to give

that which is perfectly sweet. Centrifugal cream that has been separated from the milk within a few hours of milking is undoubtedly the most desirable, and it may be had at the Walker-Gordon laboratories in Boston, New York, and Philadelphia. When this is not attainable, fresh milk should be rapidly cooled in ice or spring water, then immersed in cold water for several hours in covered vessels or wide-mouthed covered glass jars, from which the cream may be dipped or siphoned. The centrifugal cream has the advantage, however, of being freed by the process from much dirt and other matter that is foreign and also dangerous to milk. Many mothers still cling to the old-time notion of cream being too rich a food for children, and of milk being more easily digested than cream, and it is surprising to see how slowly they realize the necessity for supplying this form of fat in the food of an infant or a growing child. A half-cup of sweet cream with the cereal to be used every morning in nursery feeding will go far towards meeting the requirements of conditions calling for the use of fat in food, and it is a matter that should always be kept in mind by both physician and mother in regulating dietaries for rapidly growing children.

CHAPTER XII.

Diet for the Approach of Cool Weather.

THE approach of cooler weather is the herald for the modifications in diet that are necessary for keeping a child resistant to sudden variations of temperature, for supplying sufficient warmth, and for providing energy to meet the activity induced by the pleasant change from the enervating months of summer. Any observant mother will see at once how quickly her children have been influenced by this change, how much more active they have become, and how appetite has improved ; hence the necessity for a fuller diet. Oatmeal may now be used for breakfast, served with cream ; this combination, containing fat and starch, supplies heat. A moderate amount of sugar is permissible, and some physicians say advisable, in cool weather if digestion is good, but it must not be given to children who are in the habit of eating quantities of candy between meals, as in all probability they receive far more sugar than they can digest, and it would be ruinous to give them more. Dr. Rotch says, "The infant should never be given cake or candy, even to taste. I think that it is necessary to state this very decidedly, because it is an erroneous view which is held by most mothers that it can do no harm to give occasionally to an infant in its second year of life, or to a young child, a little candy or a little cake. This may

be true so far as the immediate effect these articles may have on the digestion is concerned, but it is of far more importance that the infant should not have its taste perverted from those articles of diet which are best for its nutrition. These new articles appeal more strongly to its sense of taste, and allow it to know that there is something which tastes more agreeable than the food which it is accustomed to have. When an infant has acquired a taste for cake or candy, it will cease to enjoy the food by which its development will be best perfected. It is, in fact, kinder to the infant never to allow it to taste cake or candy. When these articles are withheld, it will continue to have a healthy appetite and taste for necessary and proper articles of food." A very satisfactory way of giving sugar on oatmeal to a child who has already acquired the habit is to sprinkle it lightly over each spoonful, using a large salt-shaker. A trial will show that less than a teaspoonful will be required for an entire saucer of porridge, if care is given to the shaking. The least possible shake will usually suffice. This suggestion is intended to help those mothers who perhaps may have unwisely allowed their little ones to eat cereals bountifully sprinkled with sugar. So far as possible, it is safer to keep a child from knowing anything about eating it with food of any kind, but if the habit has once been formed, try regulating it in this way, and see if the child will not infinitely prefer the sweet gritty taste of the few granules he gets by sprinkling each spoonful immediately before he eats it to eating a syrupy concoction of porridge, milk, and a larger quantity that has dissolved. I have seen a child of

seven call for lump after lump of sugar for a small cup of cocoa simply because each lump dissolved before she could taste it, and she had no idea whatever of what sweet really meant. I have frequently seen this fact clearly demonstrated. I have also seen a child eat very contentedly a whole dish of oatmeal and cream minus salt or sugar, never missing the sugar, although accustomed to a little, because he was too intent upon something else to think of the action required to shake it over each teaspoonful of porridge. By simply watching children as they eat, I have come to the conclusion that it is not necessary to sweeten foods to any great extent to gratify their palates, even if they have acquired the taste. If they must have sugar, let them have it just as it comes from the grocer,—a lump after dinner for dessert, or on special occasions, as a supplement to an unsatisfactory meal, it may be sprinkled very lightly upon a piece of bread and butter. When sugar is handled carefully, it may be made a very important article of food, as with good digestion it gives heat and energy and is easily assimilated. Efforts should always be made to supply it largely in its natural state, as in fruits, etc.

For chilly days cornmeal mush may also be used for breakfast. The use of wheat and hominy need not be abandoned, but oatmeal and cornmeal may now be used for the variations needed in the more liberal and heat-giving dietary required for cooler weather. An occasional baked potato is a pleasant addition to the breakfast menu (supplying starch and salts), or a baked apple served with top milk or pure sweet cream if attainable, leaving this menu to be very simply com-

pleted with bread and butter and a dish of rice or hominy, the starch element (carbohydrates) necessary to make a perfect combination. The apple is to be peeled before baking (page 115). Graham or corn-meal muffins, if thoroughly baked and made thin so that they are nearly all crust, will be enjoyed on cool mornings, and if made in this way they will be far more wholesome than stale bread that has been poorly baked. Too frequently the only virtue, so called, of one-day-old bread is the fact that it *is* stale. When muffins are crisp and dry throughout, they are appetizing and wholesome. They should not be given to a child when hot enough to melt the butter used, but when they are cool enough to put butter on in small pieces they will answer every purpose of good bread, and prove a pleasant variation. It must not be overlooked that muffins of whole or Graham meal would supply a fair proportion of the necessary constituents of a well-ordered menu, containing starch and proteids, also fat in the butter used. Hence a very complete little breakfast may be made of whole-meal bread and butter or whole-meal muffins and butter, supplemented with a glass of milk and something supplying sugar and salts, as stewed fruit, for instance. Any one who is familiar with the action of intense dry heat upon starch will readily understand why the above is practicable for the nursery. As muffins are ordinarily prepared, they are not allowable for children's diet. Not enough attention is given to making meals appetizing for children who have reached an age that, to say the least, is somewhat discriminating. A child of five is fully able to enjoy excellent cooking. By

this I mean simple articles well prepared. I have known one child who was taught to eat very simple food which was always prepared with great care. He invariably showed lack of appetite and little enjoyment of meals when away from home unless his mother directed the preparation of his food, and his frequent remark was, "Mamma, I like *your* cooking best." Yet nothing was ever said in his presence to give rise to comparisons. This child was not yet five years old.

For dinner menus in cooler weather a more liberal allowance of starchy foods may be used, such as potatoes, rice, purées of peas and beans, with tapioca and corn starch for desserts; instead of the broths, meats may be used every day, and fish occasionally in summer; puddings may now appear for desserts alternately with fruits, not forgetting that salts must be supplied in these menus by giving a green vegetable in connection; as, for instance, rare roast beef (proteid), baked potato (starch and salts—carbohydrate), dish gravy, purée of spinach (salts), with wine jelly for dessert; or, as a contrasting menu, roast lamb (proteid), rice (starch—served with salt and cream to supply fat lacking in rice), dish gravy, with some wholesome fruit, fresh or stewed, for dessert, thus supplying the necessary salts. Supper menus should continue the same as those indicated for summer use, allowing the child to satisfy his appetite by taking as much bread and milk as he desires, or whatever else is given in its place. It can never be insisted upon too much that children should have light suppers, and that digestion should have its hardest work to do during the day, before evening comes. If care is taken in this direction, sleep will be sound and rest will be

refreshing. There is no more perfect food combination for a child's supper than a bowl of bread and milk ; in many nurseries this fact seems to be entirely overlooked. It is easily prepared, contains all the elements necessary for a perfect food, and deserves a prominent place in a child's dietary, provided the milk be pure and the bread wholesome. If by any unavoidable circumstance a child has been deprived of a sufficient amount of nourishment during the day, as sometimes happens when travelling, and a capricious appetite interferes with the enjoyment of the bowl of bread and milk for supper, try a raw egg beaten up very light, with a breakfast-cupful of milk, a little sugar, and a pinch of cinnamon added. This, with a piece of bread and butter, will make a full and easily digested meal, and is allowable for the evening meal under special circumstances.

This is a fact to remember when one is away from home with children, and is, through disinclination to give trouble, subject to dietetic difficulties that frequently seem insurmountable.

CHAPTER XIII.

Nursery Dietaries and Menus.

MILK, an infant's first food, represents the four classes of foods,—proteids, carbohydrates, fats or hydrocarbons, and inorganic foods, as salts and water. Inasmuch as each meal given to a child after weaning must represent these different classes, it is evident that the simple principles underlying dietetics must be carefully considered in the selection of menus. Simplicity must be the rule, one food of each class being usually sufficient to constitute a satisfactory meal. One of the greatest difficulties experienced is in the provision of sufficiently varied menus. This must be done that appetite may be stimulated to assist digestion. Constant repetition of any food causes indifference, no matter how much it may have been enjoyed at first.

Taking it for granted, therefore, that those in charge of children understand thoroughly the principles of dietetics, there is still a great deal of study required for the selection of wholesome combinations. The following illustrative menus are intended to give assistance in this matter, either directly or by suggestion. They may be interchanged to suit the general house-supply, vegetables being used according to season, and care being taken to follow explanatory notes as to combinations. But sufficient variety is given to obviate even this labor in constructing a varied dietary for a

child for each season. A little judgment and intelligent consideration can, however, carry still further the principles involved, if desired, by the study of the given proportions and combinations of the cereals, green and starchy vegetables, broths, meats, fats, and fruits, in their relation to the menus, and by the regulation of quantities according to the age and condition of the child. It will be noticed that quantities are mentioned at times when certain foods are to be limited at each meal, leaving the others to be taken according to the appetite of each child. If a child is accustomed to regular, simple meals, its appetite may be trusted to regulate amounts. If, on the contrary, it has been fed "a little of everything," and has been allowed to eat candy, etc., between meals, this point must be carefully considered, and an effort must be made to bring back the child to simple tastes and regular habits, by omitting the foods forbidden for children and by giving no food between meals. The amounts indicated should vary in accordance with the age, weight, and condition of the child. It is evident that an active child needs more than one who is passive. The safest rule to follow is to give, so far as possible, a single representative of each class of food at each meal; to give little meat and sugar, and to complete the quantity required for each meal with broths, starchy vegetables, and either green vegetables or else fruits. When constructing a menu for a child, keep constantly in view the proportions required of the various classes of foods.

All the dishes indicated in the following menus may be easily prepared by any one understanding the principles of cooking if care be given to the dainty prepa-

ration of the articles called for, and if scrupulous cleanliness (one of the most important factors in nursery cooking) be observed. Broths must be well skimmed after cooling. If made hurriedly, as may happen occasionally from necessity, and the broth is made from lean meat, it is a very simple matter to cool it sufficiently by placing it on ice or in cold running water, first skimming with a spoon, and then using a piece of clean blotting-paper or some large crumbs of bread; the latter will absorb the remaining beads of grease fairly well, and they do not leave an unpleasant taste, as the blotting-paper occasionally does. The use of fat when in the form of cream or butter is advisable for a child, but it is decidedly not allowable when in the form of floating particles of grease upon the top of poorly made soup.

Season carefully during the process of cooking. Things are tasteless and insipid if not seasoned at the proper time, and a child's palate is as sensitive as that of the trained adult's, even more so in some respects. It must be remembered that relish of food aids digestion. Children's diet is usually too one-sided, containing too much fat, starch, and sugar, and too little protein. Demme says that starchy food taken in too great quantity causes the white blood-corpuseles to predominate over the red. This may serve to show to some mothers why their children are pale-faced and anæmic. If we want our children to be strong, we must use animal food as an important part of their diet, in the form of milk, eggs, and meat soup for younger children, and in that of eggs, fresh meats, etc., for those who are older. In selecting menus, macaroni and spaghetti

should be more relied upon for variety than is usual. The error of using potatoes every day, instead of varying with other starchy foods, is one of the most common to be met with in the nursery. The starch of a properly cooked potato is easily digested, but too great reliance is usually placed upon its supplying a large share of the nutriment required in a well-balanced menu, whereas the fact of potatoes containing three parts of water to one part of starch shows the fallacy of this conclusion. They are useful for supplying salts in restricted dietaries: for instance, if vegetables or fruits are not obtainable, they may be depended upon to supply some of the salts necessary for a well-balanced menu and at the same time provide starch and prevent concentration. The fact that the starch of potatoes is easily digested makes them a fit food for very young children; therefore, if not abused,—that is, if not relied upon for every-day use to supply enough nourishment for a whole meal,—they are a valuable nursery food. It is often supposed that a baked potato makes a complete meal, when in reality it is a very meagre one unless supplemented by good whole-meal bread and butter and a glass of milk, or a chop if white bread is used instead of whole-meal bread. Macaroni owes much of its high nutritive quality to the gluten it contains, the presence of which, in addition to its other constituents, explains why it may be used as indicated elsewhere (page 127) for one-course menus, representing as it does every class of food, being a little deficient only in fat as compared to wheat flour and oatmeal. This is corrected by the use of cream, or of butter and milk, in cooking (page 96). The usual custom is to

boil it in cold water, with the general result of a pasty, tasteless mass that certainly requires, to make it at all palatable, the addition of the cheese and tomato sauce so frequently used. If it is boiled tender in salted boiling water, dropping in a small piece at a time so that the water shall not cool, (page 96), this pastiness and tastelessness will be avoided, and the macaroni will have the rich, nutty flavor that gluten foods should always possess.

There are numberless ways of varying nursery menus in a perfectly simple and wholesome manner, and there is no part of the study of domestic science that will more amply repay the thoughtful and painstaking mother than that relating to the pleasure, comfort, and well-being of her children.

Dr. Thompson's General Rules for Feeding Young Children, given in "Practical Dietetics," are concise and comprehensive, as may be seen from the following:

1. Allow time for meals.
2. See that the food is thoroughly masticated.
3. Do not allow nibbling between meals.
4. Do not tempt the child with the sight of rich and indigestible foods.
5. Do not force the child to eat against its will, but examine the mouth, which may be sore from erupting teeth, and examine the food, which may not be properly cooked or flavored. If good food is refused from peevishness merely, remove it, and do not offer it again before the next meal-time.
6. In acute illness, reduce and dilute the food at once.
7. In very hot weather give about one-fourth or one-third less food, and offer more water.

Dr. Rotch, of Boston, says the nutrition of young human beings may be divided into three distinct nutritive periods, corresponding to the stages of their development. The first period consists of the first ten or twelve months of life, during which time milk is the food considered. The second period comprises the second and third years, and the third period the remaining years of childhood. He says, "The science of feeding depends almost exclusively, in addition to the general principles of which I have already spoken,* on the knowledge of what elements of the food are required by the growing tissues in these nutritive periods, and also on the time when the various digestive functions are ready and able to dispose of them." Dr. Rotch's remarks concerning these periods are very readily understood, and they cover the ground in a concise, simple, and authoritative manner. The first period is spoken of in another connection (page 19). He says of the second period, from the twelfth month to the twenty-eighth or thirtieth month of life, that this is about the second half of the period which we are in the habit of calling infancy ; and it also includes the time when the last four teeth of the first set appear. He says further, "In this second nutritive period the element of variety in the food becomes important. It is undoubtedly important that the actual nutritive values of the food which it is best to give to infants in this period be considered, but it is much more important that special attention be paid to its variety. Foods should be given which, while containing a fair

* Pediatrics, Lippincott.

percentage of nutritive elements, yet differ in the combination of these elements to such a degree that they fulfil the requirements of this period of life. It is best to increase gradually the variety of articles of diet from the twelfth to the twentieth month, always adapting the food to the especial infant. Thus some infants may be able to digest and assimilate proportionately large quantities of starch; others may both need and digest larger proportions of the proteids or of sugar than the infants first spoken of.

“Between the twelfth and thirteenth months I am in the habit of giving the infant five meals during the day. At this time it is well to accustom it to take its food from a spoon, and as soon as possible to omit feeding from the bottle. The five meals should be arranged in the following manner:

“For breakfast, bread and cow’s milk, slightly warmed.

“For lunch, equal parts of oat jelly and cow’s milk, warmed, with a little salt added according to the infant’s taste.

“This meal of oat jelly should be repeated in the middle of the afternoon.

“In the middle of the day, broth of some kind, either chicken or mutton, carefully prepared so as to be free from fat on its surface, can be given with some bread.

“The fifth meal should be given in the latter part of the afternoon, and should consist of bread and milk.

“In some cases it is impossible to make infants swallow bread for a long period after the usual time

of twelve to thirteen months. At times it is not until they are two and one-half to three years old that they can be induced to take bread. In these cases we must feed them according to our judgment of the individual case.

“ When the infant is fourteen to fifteen months old, some thoroughly boiled rice can be added to the broth in the middle of the day, and if it digests this well it can also have bread given with this meal.

“ When the infant is sixteen months old, it can have a small amount of butter on its bread. When it is seventeen to eighteen months old, it can have a thoroughly baked white potato, mixed with butter and salt, added to its mid-day meal of broth. When it is nineteen to twenty months old, eggs can become part of its diet.

“ There are not many fruits which should be given to the infant in its second year. A baked apple can be given at the evening meal when the infant is fourteen to fifteen months old ; or, for variety, the apple can be made into a simple sauce, never, however, having the sauce made with much sugar. When peaches are in season, a ripe peach can often be given with benefit, especially if the infant is inclined to be constipated. Other fruits should be avoided, as they are not necessary for the infant’s nutrition, and at times produce serious trouble.

“ The third nutritive period I have arbitrarily made to begin at about the thirtieth month of life.

“ At this time it will be well to begin to accustom the child’s digestive functions to a still greater variety of food. In summer, the more easily digestible vege-

tables, such as squash, young peas, and young beans, can be given. The variety of fruits can also be increased at this period, but they should be cooked. The principal change which is to be made in the diet to which the infant has been accustomed is a very decided increase in the proportion of the proteid element of its food. This is accomplished by means of giving the child meat. The quantity of meat which should be given towards the end of the third year should be small at first, and should be given at intervals of a day or two. Meat as a regular article of diet for each day is not, as a rule, required until the child is between three and four years old. The kinds of meat which should be given in this early period of childhood are chicken, mutton-chop, roast beef, and beefsteak. These meats should be cut into small pieces, and a little salt added according to the child's taste. It is well, during the latter part of the third year and the first half of the fourth year, to give the child an egg on one day and meat on the next.

“When the child has reached the age of five or six years, we should allow it to have a somewhat more varied diet, but during the whole period of childhood up to the age of puberty the closest attention should be given to the regulation of the kind and the amount of food to be given to the child, and any deviations from the rules which I have just laid down are to be deprecated.”

It should be particularly noted that meat is not given until after the second period,—*i.e.*, after thirty months,—and eggs are withheld until the child is nineteen or twenty months old.

The following menus are constructed upon this base, suggested by Dr. Rotch, and explanatory notes are introduced where it seems advisable. The hours for the five meals from twelve months may be arranged, as most convenient for the average household, as follows :

TWELVE TO THIRTEEN MONTHS.

7 A.M. Early breakfast—a breakfast-cupful or a six-ounce bottle of warm milk; a piece of bread or a cracker.

9.30 A.M. Breakfast proper—two tablespoonfuls of oat jelly with the same quantity of milk, seasoned with a little salt.

12.30 P.M. Dinner—a cup of chicken broth with stale bread crumbs; one tablespoonful of gelatin, flavored with orange juice (page 216).

3.30 P.M. Repeat meal given at 9.30.

6.30 P.M. Supper—one-day-old bread broken in warm milk (six ounces).

Supper at half-past six gives time for the child to have a few minutes' rest before going to sleep at seven. The child should be dressed for the night before receiving this meal, that unnecessary handling upon a full stomach may be avoided. Half-past six is the time frequently advised for the first meal in the morning, but, by judicious training as to sleep, seven o'clock will be found early enough, and if the habit of sleep is once fixed a child will not wake before this time, thus giving many mothers without nurses the opportunity for sparing their strength a little in the early morning. It is also of great assistance under some

circumstances to give the first meal from the bottle for a longer period than twelve months, as at this early hour much carelessness may be expected from ordinary servants in the handling of baby's food, and unless there is a reliable nurse the mother must usually rise very much earlier than is necessary for other demands. The plan of having a bottle ready for warming at seven o'clock in the morning will obviate many sources of trouble that are frequently met with, and, while not the ideal plan, it is practically much better than to allow servants an opportunity for careless handling of baby's first meal for the day, which may readily change the tenor of that entire day's atmosphere. Breakfast at 9.30 for baby gives the mother time to take her own comfortably, to bathe her child at nine, and feed it at half-past, after which it should sleep an hour or more, and then be taken out for a while before dinner at 12.30. It may be taken out for an hour again after dinner, from which time it will be likely to sleep until its next meal at half-past three. From this time it should be kept awake until it is ready to be put to sleep for the night at seven, after being undressed and fed at half-past six. Dr. Samuel Adams, of Washington, says, "A young infant has nothing to do but eat and sleep. As soon as he is fed he will take a nap, and will probably sleep for an hour and a half. After the first year the naps become shorter and less frequent. During the second year a nap in the morning after breakfast, and one in the afternoon about one or two o'clock for an hour or an hour and a half, are usually sufficient, and these naps should be insisted upon for the rest of his mind and body

and to enhance his growth and health. As the child attains the third year he can usually drop the morning nap. The afternoon one should be insisted upon very soon after the child has his noonday meal, in winter as well as in summer." Some physicians advise a night feeding at ten or eleven, to be given until eighteen months. If so, the food may be given from a bottle without disturbing the child's sleep by keeping to the same hour exactly and gently touching the lips of the child with the tip, lifting the pillow carefully at the same time. A child who is well is usually so sleepy that it will take the milk very readily without opening its eyes. At this time any necessary changes for the night may also be made, to avoid further chance of disturbance. Regularity in this method is certain to bring eventual success. If, during this early period of feeding, great care is given to the little points that appear to many to be trifling at the time, a fixed habit of sound sleep from seven to seven may be formed, that will prove one of the greatest blessings conferred upon a child by a wise mother.

ALTERNATING MENU FOR THE SAME PERIOD,—*i.e.*,
TWELVE TO THIRTEEN MONTHS.

7 A.M. Six-ounce bottle of warm milk, with a piece of crust from French bread or a cracker.

9.30 A.M. One small cup of fresh sweet milk (heated to 167° F.). Two tablespoonfuls of well-cooked oatmeal gruel served with two tablespoonfuls of fresh cream, also heated.

12.30 P.M. One-half pint of mutton broth with

stale bread crumbs. Two tablespoonfuls of junket, made with Fairchild's essence of pepsin.

3.30 P.M. A breakfast-cupful or an eight-ounce bottle of milk and gelatin. Dissolve a teaspoonful of gelatin in a little of the cold milk, and add to the remainder when it is warm, taking care to keep the mixture well covered when dissolving.

6.30 P.M. A breakfast-cupful of warm milk and a piece of bread or a cracker, or, if the bottle is still used, a six-ounce bottle of warm milk, with bread or cracker.

FOURTEEN TO FIFTEEN MONTHS.

7 A.M. One slice of bread and eight ounces of milk, given in cup or bottle.

9.30 A.M. One cup of barley jelly and milk, half and half, salted.

12.30 P.M. One slice of bread, one-half pint of chicken broth, with a tablespoonful of well-boiled rice added.

3.30 P.M. Repeat meal given at 9.30.

6.30 P.M. Eight ounces of warm milk and a Graham cracker.

ALTERNATING MENU FOR THE SAME PERIOD,—*i.e.*, FOURTEEN TO FIFTEEN MONTHS.

7 A.M. Bread and milk (eight ounces).

9.30 A.M. One tablespoonful of gluten porridge served with top milk.

12.30 P.M. One cup of chicken jelly made with milk. A piece of crust of bread.

3.30 P.M. One cup of oat jelly and top milk, half and half, as directed before.

6.30 P.M. Six ounces of milk, the soft part of a baked apple, a cracker, or a piece of zwieback.

At sixteen months add a little good butter to the bread given. (Rotch.)

SEVENTEEN TO EIGHTEEN MONTHS.

7 A.M. One piece of bread and butter and a cup of milk.

9.30 A.M. One cup of oat jelly and top milk, half and half.

12.30 P.M. One cup of chicken broth, bread and butter, and a baked potato mixed with a little butter and salt. A tablespoonful of juice from a sweet orange.

3.30 P.M. One piece of zwieback and a cup of sweet milk.

6.30 P.M. Eight ounces of milk and bread and butter.

ALTERNATING MENU FROM SEVENTEEN TO EIGHTEEN MONTHS.

7 A.M. Graham bread and butter and a cup of warm milk.

9.30 A.M. One tablespoonful of well-cooked wheatena served with a few tablespoonfuls of sweet cream, taken from morning's milk and heated to 167° F. One piece of bread crust or zwieback.

12.30 P.M. One-half pint of mutton broth, two tablespoonfuls of boiled rice. Bread and butter.

3.30 P.M. One cup of milk jelly and a cracker.

6.30 P.M. Two Graham crackers, or bread, if preferred, broken into eight ounces of warm milk.

NINETEEN TO TWENTY MONTHS.

7 A.M. A cup of milk and bread and butter.

9.30 A.M. Two tablespoonfuls of wheat porridge with cream, a small glass of milk, bread and butter, one tablespoonful of clarified apple (page 217).

12.30 P.M. A milky, soft-boiled egg (page 81) with stale bread crumbs, bread and butter, one tablespoonful of boiled rice, one or two tablespoonfuls of fruit gelatin (page 117).

3.30 P.M. A saucer of junket, bread and butter.

6.30 P.M. Two pieces of toasted bread broken into four ounces of hot salted milk; a glass of milk to drink.

ALTERNATING MENU FROM NINETEEN TO TWENTY MONTHS.

7 A.M. Bread, butter, and milk.

9.30 A.M. Two tablespoonfuls of breakfast hominy with salt and cream, a glass of milk, bread and butter. A pared ripe peach, if in season, or a tablespoonful of scraped ripe apple.

12.30 P.M. One cup of beef broth, with crumbs of zwieback broken in it, a baked potato, two tablespoonfuls of tapioca (page 126).

3.30 P.M. A saucer of oatmeal jelly (page 209) with a little salt and cream.

6.30 P.M. Bread and milk.

From twenty to thirty months use the foods indicated so far, varying the menus by interchanging with any similar articles, the recipes for which are given elsewhere. "After the fifteenth month two to six

teaspoonfuls of orange juice may be given, and a little later the soft pulp of two or three stewed prunes, or a baked or stewed apple." (Holt.)

As Dr. Rotch says, this is a sufficient diet for this period, and it is worse than folly for mothers to attempt at this early age, as is frequently done, to accustom their children to the use of everything and anything from the general table. There are many persons, again, who will follow a cautious course in nursery feeding to a certain point, and then undo all by a fitful lapse into carelessness. The remarks made in this connection should be emphasized if the infant's digestion and general nutrition are to be considered, and the parents should insist that no other articles of food be employed except such as are similar to those spoken of,—namely, the cereals in a variety of forms, according to the taste, judgment, and knowledge of cooking which exists in the special household.

DINNER MENUS ALLOWABLE AFTER THIRTY MONTHS.

Beef broth with vermicelli ; bran or whole-meal bread, and the best butter obtainable ; lightly broiled lamb-chop, minced and seasoned with salt ; spinach boiled tender and mashed through a purée sieve, served plain with cream or in broth ; baked potato with salt ; orange tapioca for dessert, and a fruit juice made as directed (page 100), and used as a drink.

1. Chicken broth with rice ; minced broiled tenderloin steak with salt (no butter) ; spaghetti plain ; brown bread with butter ; asparagus tips or stewed celery, with hot cream as sauce ; cup custard for dessert.

2. Mutton broth ; the white meat of chicken cut

into very small pieces ; macaroni in milk ; cauliflower or spinach ; bread and butter ; orange float for dessert.

3. Beef tea ; stewed squab ; boiled or steamed rice ; bread and butter ; purée of Bermuda onions, stewed very soft in milk ; junket with egg for dessert.

4. Milk soup ; roast beef rare and minced ; boiled spaghetti with dish gravy from roast beef ; spinach or stewed celery ; bread and butter ; rice pudding for dessert.

5. Strained vegetable soup ; minced broiled mutton-chop, rejecting all fat ; baked potato ; apple sauce ; bread and butter ; junket, made with Fairchild's essence of pepsin, for dessert.

6. Beef broth ; boiled or broiled fish ; boiled macaroni with milk ; boiled asparagus tips ; gelatin with whipped cream for dessert.

A WEEK'S DIET FOR A CHILD OF FIVE YEARS.

With but few exceptions (tomatoes, bacon, figs, and dates) the following articles mentioned may be used for children from two and a half years up, but the amounts given will be found to be more than is required for that age, as they are sufficient for a hungry child of five.

Sunday.

Breakfast.—One ripe apple, pared, quartered, and carefully cored. Two or three tablespoonfuls of well-cooked and well-selected oatmeal, with half a cup of sweet cream and a pinch of salt. A glass of warm milk. Bread and good butter. A soft-boiled egg.

Dinner.—From twelve to one o'clock. Half a cup of beef broth. Bread and butter. One lamb-chop, lightly broiled, and cut in small pieces, or a piece of roast beef or mutton, with dish gravy. One quickly baked potato, broken with a fork, eaten with salt. Two tablespoonfuls of boiled spinach, mashed through a purée sieve. A few dates and a lady-finger for dessert.

Supper.—Five to five-thirty o'clock. Milk toast; one-half pint of hot milk seasoned with salt and butter for three or four pieces of toast. A few stewed figs. Bread and butter if wanted.

Monday.

Breakfast.—Breakfast hominy and cream. Bread and butter. A sweet orange. A cup of cocoa made with nibs. A bit of fish.

Dinner.—One-half cup of mutton broth. Broiled, finely chopped steak, one large spoonful, or one lamb-chop, lightly broiled. Boiled rice, as much as wanted. Stewed celery with cream sauce. Gelatin, flavored with chocolate or vanilla, for dessert.

Supper.—Saltine crackers, broken in hot milk. Bread and butter. Stewed prunes.

Tuesday.

Breakfast.—Two tablespoonfuls of cracked wheat and cream. One poached egg, lightly done. Brown bread and butter. A few dates or an apple.

Dinner.—Half a cup of beef broth, made from the chopped steak and celery bits of the day before. A slice of roast beef with dish gravy. Macaroni, boiled

in salted water, cream to be added for sauce. If meat is not available, more macaroni may be used, as it supplies the place of meat and cereals. Two tablespoonfuls of stewed tomatoes, stewed long enough to be put through an agate or porcelain colander. Orange float for dessert (soft cup custard poured over oranges that have been carefully freed from pith).

Supper.—Bread, butter, milk to drink, and stewed apples, flavored with cinnamon or orange.

Wednesday.

Breakfast.—A sweet orange first. Oatmeal and cream. Dry toast, with cold, not melted, butter. A little stewed potato. A glass of milk. A bit of broiled fish.

Dinner.—Half a cup of chicken soup. One broiled lamb-chop. Bread and butter. Stewed onions with cream sauce. One baked sweet potato. (Onions have no sugar, hence sweet potato.) Plain or apple tapioca pudding. As sweet potato has not so much starch as white, tapioca (starch) may be used for dessert.

Supper.—Sweet buns or plain rolls, broken up in hot milk, with a light sprinkling of sugar or salt according to which food is used. A dish of stewed prunes, or a glass of prune juice. A slice of Graham bread and butter.

Thursday.

Breakfast.—Two tablespoonfuls of hominy with cream (half a cup). One scrambled egg, with bread and butter. One apple. Cup of cocoa.

Dinner.—One cup of beef broth. Bread and butter.

Spaghetti and milk in place of meat and cereal, a supplementary dessert being given, as, for instance, rice pudding. Stewed celery. Small saucer of rice pudding.

Supper.—Bread, butter, and good molasses or syrup, carefully selected, with as much milk as is wanted.

Friday.

Breakfast.—An orange. A saucer of boiled rice, with cream and salt. Bread and butter. A bit of crisp, fat breakfast bacon. Bacon supplies lack of fat in rice. Stewed potatoes.

Dinner.—One cup of beef broth seasoned with celery broth of the day before. Well broiled, boiled, or baked fish having white meat. Baked white potato. One tablespoonful of stewed cauliflower with cream as sauce. Cup custard made with one egg and flavored with cinnamon.

Supper.—Zwieback, stewed figs, bread, butter, and as much milk as is wanted.

Saturday.

Breakfast.—Cracked wheat and cream. Cup of cocoa. Soft-boiled egg, lightly boiled. Bread and butter and a few figs or dates, or, for a younger child, an orange.

Dinner.—Half a cup of mutton broth with rice added (one tablespoonful). A tablespoonful of the white meat of chicken or a tender wing. Small saucer of apple sauce. Macaroni. Bread and butter. A coffee cup of junket and one or two lady-fingers, or a sweet bun one day old, for dessert.

Supper.—Bread, butter, and honey, milk, and a small piece of one-day-old Moravian cake, made according to recipe given on page 65.

SUGGESTIONS FOR BREAKFAST IN SUMMER FOR CHILDREN FROM THREE TO FIVE.

One only of the following articles, with cream and salt: Cracked wheat, rice, tapioca, breakfast hominy, gluten (containing little or no fat).

One only of the following articles: Eggs boiled (covered with boiling water as directed, page 81); poached in salted water that does not boil; scrambled (lightly); omelet (eggs not to be separated for beating). For omelet use one tablespoonful of hot water to one egg instead of milk, as customary, beat about a dozen times with a fork, and cook quickly: the result will be a deliciously tender omelet. Broiled fish. Broiled bacon. Asparagus tops may be given frequently with any of the above articles.

One only of the following articles: Stewed rhubarb (laxative), orange or lemon jelly (made with gelatin), strawberries (carefully given, noting effect), baked apple, gelatin pudding or calf's-foot jelly, etc.

SUMMER DINNER MENUS FROM THREE TO FIVE YEARS.

1. Beef broth. Broiled fish. Baked potato. Spinach purée. A ripe, sweet orange for dessert. Bread and butter.
2. Vegetable omelet made with chopped asparagus

tips that have been previously boiled tender; or, if preferred, a plain omelet and the asparagus served alone, with or without cream sauce. A small cup of a good digestible cocoa with educator crackers for dessert.

3. Chop (lamb) broiled. Boiled rice, served with cream and salt. Bread, butter, and honey. Glass of milk if desired. In place of honey, fruit juice may be used.

4. Mutton broth with barley. Boiled egg. Asparagus tips with salt, or stewed onion with cream sauce. A cup of junket or a cup custard. Bread and butter.

5. Broiled beef pulp. Spaghetti with cream sauce, the sauce to be made as directed in a former article, with good butter, cream or milk, and flour. Four or five large prunes, stewed or simply freshened by soaking overnight in cold water, after washing well, may be given for dessert. Children who will not eat stewed prunes, or who have grown tired of them, will welcome the above change.

6. Purée of onion with beef broth, served either together or alone. Farina, cooked with salt and served with cream. Strawberry gelatin for dessert, using the clear juice only for flavoring. Bread and butter.

7. Poached egg served on well-made toast. Cauliflower tops, if tender, or a dish of apple sauce. A saucer of rice pudding flavored with cinnamon. The use of cauliflower and onion should be deferred to the latter part of this period of feeding, and results should be watched very carefully.

BREAKFAST COMBINATIONS FOR WINTER. DESIGNED
TO SUPPLY HEAT.

Amounts to vary according to the age of the child; meats to be omitted for children under five, meat once a day being sufficient at this age.

White grapes; oatmeal and cream; boiled eggs; bread and butter; cocoa without milk.

Stewed apples; cracked wheat and cream; crust muffins; broiled fat bacon; stewed potatoes; milk or cream to drink.

A ripe apple; cornmeal mush and cream; stewed or broiled chicken; baked potatoes; glass of milk; buttered toast.

Tokay grapes; cream or top milk to drink; broiled mutton-chop; hominy with salt; bread and butter.

An orange; farina and cream; broiled steak or creamed fish; cornmeal muffins, good butter; cocoa.

Clarified apples; wheatena; cream; whole-meal bread and butter; broiled squab; boiled rice.

BREAKFAST MENUS FOR A CHILD WHO HAS REACHED
THE AGE OF FIVE OR SIX. DESIGNED PARTICULARLY
TO SUPPLY FOOD FOR SECOND DENTITION.

1. Whole-meal wheat bread and butter; cocoa, always without milk; oatmeal porridge (the whole grain) and cream; stewed potatoes; broiled fish; fruit.
2. Graham muffins (page 210) and butter; milk; cornmeal mush (the whole grain) and cream; stewed chicken; an orange.
3. Corn bread; porridge made from whole wheat

ground in a coffee-mill and cooked four hours (the calcareous deposit needed is found in the outside of the grains), served with cream ; a poached egg ; cocoa ; a raw apple.

4. Hominy ; cream ; whole-meal muffins, made according to recipe for cream muffins (page 209) ; baked potato ; broiled fat bacon ; milk ; stewed fruit or white or Tokay grapes (no seeds or skins).

Dinner menus for this period should be supplied with the proteids of foods in proper proportions (meat, game, fish, oysters, eggs, milk foods, broths, etc.) and with salt-giving foods (fresh vegetables and fruits), and supper should always include whole-meal bread, stewed fruits, and an abundance of milk.

The following will serve as a sample dinner menu for the second dentition period : a cup of beef broth thickened slightly with oatmeal, or mutton broth with barley ; broiled fish, or lamb-chops, with green peas ; whole-meal bread well toasted and buttered when cool, so that the butter will not melt ; orange tapioca for dessert.

Notice that there are proteids, to form bone for the teeth, in nearly every food prescribed, and that nevertheless the salts and the starches are not omitted. The oatmeal in the soup contains proteids and salts ; the fish, phosphates ; the whole-meal bread, proteids and carbohydrates ; the butter, fat ; the orange, salts ; the tapioca, starch ; and the peas contain proteids and salts.

It must not be forgotten that the condition of a child's second set of teeth depends very largely on the kind of food taken during the years immediately preceding second dentition.

FOODS FORBIDDEN.

The following foods are forbidden under all circumstances in the nursery until after second dentition, except where indicated :

Ham.	Baked tomatoes.
Sausage.	Stewed tomatoes, except as directed on page 92.
Pork.	Fried tomatoes.
Salt fish.	Raw tomatoes, except as directed on page 92.
Dried beef.	Fried potatoes.
Corned beef.	Pickled beets.
Goose.	Carrots.
Duck.	Pastries.
Broiled kidneys.	Griddle cakes.
Stewed kidneys.	Fresh bread.
Liver and bacon.	Meat pies.
Stewed liver.	Fruit pies.
Gravy from roast or fried meats, except dish gravy. If carefully made from roasts, without grease, according to recipe given in chapter of recipes, it may be used after five years.	Rich cakes.
Meat stews as usually made, but they may be given if made as directed on page 78.	Hot biscuit.
Raw celery.	Muffins, unless made as directed on page 209, when they are permissible for a child of five.
Raw or fried onions.	Doughnuts.
Radishes.	Preserves.
Cucumbers.	Canned fruits.
	Tea.
	Coffee.
	Liquors of all kinds, unless indicated by a physician.

EXPLANATORY LISTS OF THE VARIOUS CLASSES OF NURSERY FOODS.

PROTEIDS.

These foods when eaten and digested are tissue-builders, and repair waste. More proteid foods are

needed in disease than in health, as they are more easily digested than vegetable foods.

Milk.	Partridges.	Mutton.
Eggs.	Gelatin.	Chicken.
Raw oysters.	Beef.	Squabs.
Lamb.	Turkey.	Fish.
Veal.	Pheasant.	

Milk is a complete food in early childhood when growth is active, consisting of—

Proteids	Caseine or cheese.
Carbohydrates	Sugar.
Salts	Phosphates.
Fat	Cream.

Eggs also form a complete food, if the shell, which supplies the chick with salts, is taken into consideration: hence, for children, supplement eggs with salt-giving foods.

CARBOHYDRATES (Starches and Sugars).

(Make heat and stimulate energy.)

Beans.	Peas.	Cornmeal.
Oatmeal.	Graham bread.	Wheat bread.
Graham flour.	Wheat flour.	Barley.
Oats.	Rye.	Graham crackers.
Boston crackers.	Milk or oyster crackers.	Macaroni.

NOTE.—The above carbohydrates contain a large percentage of proteids; those that follow do not.

White potatoes.	Rice.	Sweet potatoes.
Arrowroot.	Sago.	Tapioca.
Cakes.	Crackers.	Sugars.
Sweets.	Dates.	Molasses.
Muffins.	Bananas.	Figs.

NOTE.—Professor Atwater says, “The vegetable foods are rich in carbohydrates, like starch and sugar, while the meats have not enough to be worth mentioning. On the other hand, the meats abound in protein and fats, of which the vegetables have little. Beans and oatmeal, however, are rich in protein, while fat pork has very little. Carbohydrates are found in the grape-sugar of fruits, the sugar and starch of vegetables, and the seed-giving flours.”

SALT-GIVING FOODS.

Green corn.	Spinach.	Celery.
Green peas.	Green string-beans.	Tomatoes.
Fresh Lima beans.	Onions.	Brussels sprouts.
Stewed fruits.	Peaches.	Apples.
Strawberries.	Pears.	Cranberries.

HYDROCARBONS OR FATS.

Cream.	Bacon fat.	Olive oil.
Butter.	Cod-liver oil.	Cocoa.
Chocolate.		

CHAPTER XIV.

Diet in Illness.

FONSSAGRIVES says, "Nursing is an instinct with women: a little added art would do no harm." Prevention is always better than cure; and early care, with prompt recognition and treatment of symptoms, in conditions not normal, is far better than to allow the development of fevers, rickets, marasmus, and other innumerable ills to which children are constantly subjected unnecessarily on account of ignorance and carelessness upon the part of those who are responsible. The late Dr. John S. Parry, of Philadelphia, stated that more than one-quarter of all the children between the ages of one month and five years who came under his observation in the Philadelphia Hospital during a period of three years were rachitic. Dr. Gee, of London, says that of the patients under the age of two years who have come under his observation in the London Hospital, one-third were rachitic.

"The digestion of an infant should never be forced; the true index may be found by studying the actions of the bowels. No method of feeding should be tolerated until the passages show that the food is being digested and appropriated." * Quotations are not needed to prove that the weight of authority is upon the side of the necessity for exercising the

* Bruen.

greatest amount of care in diet when there is the slightest sign of indigestion or need for medical advice. A simple presentation of the physiology of digestion would undoubtedly serve to show to mothers why the need exists for this care in diet under all conditions, whether of health or of disease. It is usually supposed by writers that every one interested in dietetics knows that digestion is the process that prepares food for absorption into the blood, and that by assimilation the different elements of food are selected for their work in the body ; that the teeth chew the food, and the saliva moistens it, making a beginning by partially digesting the starch in food, and that the stomach continues the work, followed by the intestines. But a clear understanding of the *rationale* of this process is very rare among the laity. Inasmuch as every alimentary organ has its specific work to do, it must be plain that certain conditions call for certain foods ; that when digestion is faulty or disordered in any way, advice is necessary as to which class of foods are to be withheld and which are to be given : as, for instance, in typhoid fever there should be no tax upon the intestines, and foods must, therefore, be given that are easily absorbed and digested in the stomach, such as peptonized milk or beef, white of egg in water, koumyss, etc.

Mothers frequently err grievously in one direction, no doubt from lack of knowledge, in not seeing the advisability of total abstinence from food in cases of doubt, at least until a physician can be called. It is always the safest plan to follow, and it is the only way sometimes by which absolute rest can be obtained for the diseased parts. Fonssagrives says, "The number

of cases of disease which can be arrested in children by instituting a preventive diet is almost incredible. In them the digestive functions are in a state of activity proportionate to the need felt by their system for air and growth, and they are invariably involved in any attack of disease. What, then, is more natural and more salutary than to give them rest at the outset of an indisposition ; but what is less commonly practised ? This matter of diet has, in recent years, been the subject of very important research, and it is now sufficiently cleared up ; but what I do maintain is that it is a question of the very greatest delicacy, which embarrasses educated physicians themselves, and consequently could not be authoritatively solved in the family.”* Again he says, “One other piece of advice to mothers, not less salutary, is to restrict the treatment of an indisposition to diet alone. It almost always suffices for a cure, and if the attack must end in a disease, the ground has been cleared, the physician’s action facilitated, and future complications rendered less probable.” He gives the following recommendations to mothers :

“Do not give food, even light food, in a condition of fever unless the physician has recognized its propriety.

“Treat indisposition by diet, and begin it as soon as may be.

“Observe the effects of articles of food, and preserve the motions to show to the physician.

“Always ask the physician in regard to the interval

* *The Mother’s Work with Sick Children.*

which should elapse between the food and the medicine prescribed ; feed children chiefly at their habitual meal-times, and give them only liquid food after four or five o'clock in the evening.

“ It is more important to preserve, as much as possible, the regularity of a child’s meals, even when taken with an acute disease. If it is only a broth, it is better to give it at the usual hours of eating. The disease of itself breaks in sufficiently upon established habits, without our intentionally adding to the disorder.

“ Note the likes and dislikes of patients in the matter of food, and do not insist upon dishes which disgust them. Nothing is less scientific than the absolute specification of the articles of food to be given. The physician should designate classes of food so that the mother may choose, within their limits, the particular article which the child most desires. It has been said with reason that a dish desired is half digested, and it is true of all ages. Yet it must be remarked that those mothers who understand the matter direct their children’s alimentary tastes into almost any channel they please, or divert their repugnances by artifices known to themselves. They have nothing to learn in this respect.

“ Give only food of the very best quality and prepared with fastidious care.”

Another frequent source of trouble is met with in the effort to bring about an adequate comprehension of the terms liquid diet, light diet, convalescent diet, etc. Directions are frequently given to mothers and nurses in this general manner. Nurses are supposed to know what these terms mean, but many mothers need infor-

mation in this respect. One might think a broiled chop and a baked potato constituted a very light diet, whilst another would think it should be corn starch pudding, tea, and toast. Referring to this subject, the late Professor Gross, of Philadelphia,—to whose utterances the weight of authority has always been accorded,—once said, “The diet of the sick-room has slain its thousands and tens of thousands. Broths and slops and jellies and custards and ptisans are usually as disgusting as they are pernicious. Men worn out by disease and injury must have nutritious and concentrated food. The ordinary preparations for the sick are, in general, not only not nutritious, but insipid and flatulent. Animal soups are among the most efficient supporters of the exhausted system, and every medical man should know how to give directions for their preparation. The life of a man is his food. Solid articles are, of course, withheld in acute diseases in their earlier stages; but when the patient begins to convalesce, they are frequently borne with impunity and greatly promote recovery. All animal soups should be made of lean meat, and their nutritious properties, as well as the flavor, may be much increased by the addition of some vegetable substances, as rice or barley.”

Directions should be specific if they are to be of benefit. Mothers should ask physicians for definite directions, and insist upon having them, and then follow them to the letter.

The usual acceptation of the term liquid diet implies meat broths, milk, whether peptonized or not, beef juice, gruels, barley water, white of egg, mulled egg, whey, wine and water, etc., all of which are to be

given under the direction of the physician, as it is during fevers and acute stages of disease that they are required. It is a difficult and important matter to determine the kind and quality required during twenty-four hours, the intervals to be allowed, and the temperature of the liquid foods to be given.

Light diet is the term usually employed to designate the foods to be given during convalescence, and consists of very simple and easily digested foods. Fresh-laid eggs may be used when changing from the broth diet to solid food. They should be cooked in hot water as directed on page 81. Fonssagrives gives a method that he asserts to be infallible for making the whites of eggs milky in cooking, which he says is the proof of good cooking and the promise of easy digestion. It is to have a tumbler (or a cup) filled with water brought to the boiling-point, in which the egg is to be placed; withdraw the glass or cup from the heat, and take out the egg when it can be done without scalding the fingers. Eight minutes' immersion in boiling water that has been taken from the source of heat and covered will usually be found to serve the purpose. Something depends upon the freshness of the egg.

Light diet consists of everything included in liquid diet, fruit, such as grapes and oranges, boiled or poached eggs, dry and milk toast, all the soups allowed in the nursery, delicate puddings, scraped beef, the tender part of oysters, jellies made with gelatin, either sweet with fruit flavoring or wine, or not sweet, using salt with meat and chicken broths, etc. The change to light from liquid diet should be very gradually made, adding one new food at a time. The following rules,

suggested by Dr. Napheys, should always be observed in preparing, cooking, and serving food for the sick : "All the utensils employed should be scrupulously clean. Never make a large quantity of one thing at a time. Serve everything in as tempting and elegant a form as possible. Put only a small quantity of an article on a dish at a time. Keep milk and other delicacies on ice in warm weather. Never leave food about a sick-room. Never offer beef tea or broth with the smallest particle of fat or grease on it, nor milk that is sour, nor meat or soup that is turned, nor an egg that is bad, nor vegetables that are underdone."

Convalescent diet differs only from the ordinary diet to which the child is accustomed in its extreme simplicity and the small quantities allowed. One or two foods only should be used at one meal. Bread, fresh eggs, fish, oysters, meat, and cooked fruits and a few of the most easily digested vegetables are the foods from which to select. Remember that the sudden sight of food is sometimes an appetizer, and that a convalescent will often eat what is brought to him unawares, and refuse to eat what he has himself been asked to choose, or deny that he has an appetite when food is mentioned.

The following is a summary of practical points for use with children, as suggested by the remarks of R. W. Burnet, M.D.,* concerning foods in illness : Drinking hot water at bedtime and cold or hot in the morning before breakfast for dyspeptic disorders ;—a tea-spoonful of malt added to a cup of milk when keeping

* Foods and Dietaries.

up milk diet for growing boys and girls who are anaemic;—the use of additional cream in food as a laxative;—in mucous diarrhoea to use farinaceous foods, such as arrowroot, tapioca, sago, with milk, white of egg, to give small quantities of food at short intervals, to keep the patient warm, the food to be neither hot nor cold, to be eaten slowly, a teaspoonful at a time, to use brandy if physician advises, and to use meat juice when farinaceous foods will not do;—in kidney troubles, often following scarlet fever, etc., to feed very lightly, to cut down albuminoids under the physician's advice, to use milk as a sole diet for children in this trouble, and for convalescence to give the usual nursery menus minus meat;—in scurvy, caused by restricted diet, if fresh vegetables or fruit cannot be had, to use lemon juice (purées are a useful form for vegetables in this trouble, and all softer foods of nursery dietaries).

Anæmia may occur in connection with all diseases. For dietaries for anæmic children any of the nursery menus given may be used, with a glass of cocoa or beef tea half-way between meals, and before bed a cup of peptonized or malted milk (a teaspoonful of extract of malt to a cup of milk). Cream added to whey is a useful food for children of consumptive inheritance. They should early have salts of tender meats, vegetables, and fruits, a sufficient quantity of milk, open-air life, little study, and an abundant and easily assimilated diet. Bronchitis requires a liberal dietary of light, nourishing food. Diphtheria requires abundant nourishment. There is danger of overfeeding in typhoid fever: milk should be carefully taken, and it should be peptonized when used. In diarrhoea, gelatin

and arrowroot, white of egg and water, peptonized milk, etc., are useful. Special dietaries must be given by the physician, as each case must be individualized, and he should be able to select the kind of food required and the form in which to give it, and also to direct how it should be prepared.

Inasmuch as children are frequently poisoned by eating sweets improperly prepared, or berries, or seeds, or by sucking painted toys, their treatment under such conditions becomes a matter very closely related to dietetics. Jane H. Walker, M.D., says,* "The first and most important thing is to make the child vomit as speedily as possible, . . . to tickle the back of the throat with a feather, and give large drinks of luke-warm water, or of mustard and warm water. A tea-spoonful of mustard in a tumbler of warm water is very efficacious. Greasy or soapy water, if it is the readiest obtainable, does perfectly; soapy water has the advantage that if the poisonous substance taken be an acid, it is an excellent antidote. See that the child is repeatedly nauseated, and then give it bland sooth-ing substances, such as white of egg beaten up, milk, barley water, or oil. These help if the poison has been of an irritating character, such as carbolic acid.

"If there is great depression, stimulants must be given and hot-water bottles applied. The best stimu-lant is strong hot tea, because it is an antidote to many poisons.

"If there is great tendency to sleep, it must be pre-vented at all cost. This tendency generally shows that

* A Book for Every Woman, Longmans, Green & Co.

opium in one of its numerous preparations has been taken, and sleep indulged in at this time will probably be the sleep that knows no waking. When the poisonous substance that has been taken is known, the method of procedure differs with the particular poison."

ANTIDOTES FOR POISONS.

Useful hints for emergencies.

In cases where the other articles to be used as antidotes are not in the house, give two tablespoonfuls of made mustard in a pint of warm water. Also give large draughts of warm milk or water mixed with oil, butter, or lard. If possible, give as follows :

For bedbug poison, blue vitriol, corrosive sublimate, lead water, saltpetre, sugar of lead, sulphate of zinc, red precipitate, vermilion,	Give milk or white of eggs in large quantities.
For Fowler's solution, white precipitate, arsenic,	
For antimonial wine, tartar emetic,	Give prompt emetic of mustard and salt, tablespoonful of each ; follow with sweet oil, butter, or milk.
For oil of vitriol, aqua fortis, bicarbonate of potassium, hydrochloric acid, oxalic acid,	
	Drink warm water to encourage vomiting. If vomiting does not stop, give a grain of opium in water.
	Magnesia or soap dissolved in water, every two minutes.

For caustic soda, caustic potash, volatile alkali,	Drink freely of water with vinegar or lemon juice in it.
For carbolic acid,	Give flour and water or glutinous drinks (olive oil in large quantities, then an emetic, is recommended by Dr. Walker).
For chloral hydrate, chloroform,	Pour cold water over the head and face, with artificial respiration, and galvanic battery.
For carbonate of sodium, copperas, cobalt,	Prompt emetics; soaps or mucilaginous drinks.
For laudanum, morphine, opium (paregoric carminatives),	Strong coffee followed by ground mustard or grease in warm water to produce vomiting. Keep in motion.
For nitrate of silver,	Give common salt in water.
For strychnine (rat and beetle paste), tincture of nux vomica,	Emetic of mustard or sulphate of zinc, aided by warm water.*

* American Analyst.

CHAPTER XV.

Diet for School-Children.

YEO emphasizes the period of school-life as one of the most critical and important epochs in the life of children as regards adequate nutrition. He says that at this period there is not only continuous growth and development, but remarkable activity, which demands a complete and liberal dietary. Teachers in boarding-schools are apt to overlook this fact, and parents, as a rule, know little of the necessity for additional care at this time, with the result only too often of the foundation being laid for future disease, or of the undermining of strength that should be held in reserve for later life. Both body and mind are undergoing rapid development at this time, and the greatest care should be exercised. The food must be abundant, and must contain sufficient proteids, starches, sugars, and inorganic salts to meet the constant demand for these constituents of a perfect food. It must be remembered that this is a period when digestion and assimilation are active. It is a frequent custom among mothers of growing boys and girls going to school to jest about their immense appetites, and not only to jest, but actually to limit supplies of certain foods especially needed at this period. The custom of sending children to school upon a light breakfast or none at all, with a cold luncheon for the noon meal, is reprehensible to the last degree. Or, if

a hot dinner is provided, the habit of rushing home at noon in a limited time to consume eagerly and rapidly the food which should be eaten leisurely and enjoyed, has a strong influence upon the integrity of the child's health, and it should not be allowed under any circumstances. If school laws are rigid, remember that parental authority should be absolute, and insist upon different hours ; or, if nothing better can be done, keep the child away for the time required, irrespective of landmarks, etc. Such action, if concerted, would speedily bring authorities to the point of meeting existing needs in this direction. Do not forget that there is a lifetime for study and only part of one during which the physical building-up process can be regulated. To sum up the rules laid down by Yeo, Dukes, Thompson, and others, the foods required during this period are as follows : Well-made whole-meal bread ; as much butter as is desired ; an abundant supply of milk all through adolescence ; starches and sugars should be freely supplied (giving heat and force) ; meat twice a day ; fish for delicate feeders ; green vegetables in abundance, either alone or in vegetable soups (to prevent eczema) ; suppers should be light, not stimulating ; the craving for sweets should be satisfied with moderation and wisdom in selection ; a free use of salads should be made ; all cooking should be carefully looked after, and food should be made savory and appetizing ; in fact, the rules given by dietists for early life should be carried out through the entire period of childhood to adult life, and, indeed, many of the suggestions may be followed with benefit even then.

Dr. Thompson says many children inherit feeble constitutions, such as the scrofulous, rachitic, and gouty, which must be combated through the whole period of childhood. He says such children are better at home, where they can be under constant observation and proper dietetic treatment, or country schools can be found for them where such matters are made the subject of special consideration. He speaks of the large number of cases of anæmia and chlorosis seen in young girls during or shortly after the attainment of the condition of puberty, and which he says are directly traceable to malnutrition from faulty diet. This fact may serve to show to some parents why Providence, as they say, has so frequently afflicted their growing daughters with delicate health, which is more frequently their lament than their shame. I think it was Shirley Dare who said that the day will come when many forms of illness will be considered a discredit to those involved. As the knowledge of causes increases there will certainly come a less ready willingness to credit everything to a hitherto much-abused Providence. The patience of physicians in dealing with this class of diseases is a constantly growing marvel. Inasmuch as Dr. Thompson * has covered the subject of school diet so thoroughly, liberal quotations are made in the interest of our readers.

“ Girls take much less exercise than boys as a rule, and are more apt to become constipated. This difficulty may be increased by lack of sufficient fresh vegetables or fruit in their diet, and if prolonged it is

* Practical Dietetics, W. Gilman Thompson, M.D.

enough in itself to cause anæmia. The latter (anæmia) may also be brought about by insufficient good animal food. It should be the imperative duty of every head master of a school for children to realize the responsibilities of rightly developing the physical constitution of those intrusted to his care, and to make a thorough study of the questions of dietetics involved.

“An important consideration in school diet is to prevent monotony, which becomes so common from economic reasons, or more often from carelessness. It is much easier to yield to routine and force of habit or to leave the matter to the indiscretions of an unintelligent cook. But a little study and thought expended upon this subject can always result in furnishing variety in a wholesome diet without material increase of expense.

“The hours for study and for meals should be so regulated that sufficient time should be allowed before each meal for children to wash and prepare themselves comfortably without going to the table excited by hurry, and they should be required to remain at the table throughout a fixed time, never being allowed to hastily swallow their food in order to complete an unfinished task or game. An interval of half an hour or more should intervene for recreation after meals, in order that digestion may be well under way before any mental exertion is required. Constant nibbling at food between meals should be forbidden; it destroys the appetite, increases the saliva, and interferes with gastric digestion. The number of meals for children should be adapted to the age of the pupils. For young children from ten to twelve or thirteen years of age it

may be necessary to furnish food somewhat oftener than for the older ones.

“If children live at a distance from their school, or if they are weak and easily fatigued and inclined to sleep over in the morning, their hours for study should be so adjusted that they are never obliged to hurry their eating in order to be on time for school work. The teachers should consider themselves quite as responsible for regulating this matter as are the parents.

“Children should never be hurried off to school in the morning with an insufficient and rapidly eaten breakfast. Their appetites are often poor at this hour from the effects of an ill-ventilated sleeping apartment, and if they are subsequently kept at school for five hours without luncheon they will be very ill prepared for mental work. Or they ride to school without exercise after a hasty breakfast, take a hurried cold lunch at noon, and perhaps a warmed-over late dinner, and at six or seven o’clock a fourth meal, after which they are expected to study and go to bed.

“It is being more and more realized by teachers and the public in general that the breaking down of health at school is quite as often, if not oftener, due to impoverished nutrition than to overwork.

“A fact which is often overlooked in the dietetic treatment of growing children is that their digestive processes are so active that the stomach is emptied somewhat sooner than in the case of adults, and, their meals being promptly absorbed, it is natural for them to become hungry if the intervals between the hours of eating are prolonged. In some schools, children are given their last meal of the day at six o’clock in

the evening, and they may not breakfast until seven or half-past seven or even later, leaving an interval of over thirteen hours during which they have no food at all. The evening meal is usually made light, on the ground that they can sleep better, and it is therefore sooner digested. Robust children can, perhaps, thrive on this treatment, but those less strong are injured by it. For some school-children of from ten to fourteen years of age it will be much better to give the evening meal later, at say seven o'clock, and the breakfast at half-past six or seven, and if they awaken hungry during the night there is no harm in their having a glass of milk and a cracker.

“Very delicate children whose appetites are poor and who do not do justice to their regular meals should be given an extra allowance of hot broth or hot milk, or an occasional cup of chocolate, with bread and butter and rusk, between meals.

“These general rules are applicable in cases of children who, during one or two years, seem to develop with extraordinary suddenness and rapidity, growing sometimes two inches or more in six months and attaining a height quite disproportionate to their frames. The demands of this rapid growth must be met by proper nutrition, or serious subsequent impairment of vitality may result. Such children should have their meals made tempting by good cooking and pleasant variety as well as an agreeable appearance of the food.

“Meat which is carved in unsightly masses, and vegetables which are sodden and tasteless, will be refused, and an ill attempt is made to supply the

deficiency in proper food by eating indigestible candy, nuts, etc. Children often have no natural liking for meat, and prefer puddings, pastry, or sweets when they can obtain them, and it is the more important that meat should be made attractive to them at the age when they need it.

“It is unnecessary to discuss further questions which, after all, must be controlled by tact and circumstances of individual cases, and the line must be drawn with care between making a child too fastidious on the one hand in regard to the nature of its food, and, on the other hand, impairing its constitution by monotony of diet and ill-cooked viands. Children at school should especially be required to eat slowly, for the habit of fast eating is almost contagious, and, as it is much easier to acquire than to overcome, the foundation of dyspepsia and life-long discomfort may be laid in this way in childhood.

A SAMPLE DIET.

‘If early rising is insisted upon, a child should never be set any task before breakfast, especially in winter, and if it is not expedient to serve a full breakfast at half-past six or seven, the child should be given a bowl of hot milk and bread, or a cup of cocoa with a roll, or other light food ; breakfast may be served later after the first exercises of the morning, and should be a substantial meal with animal food in the form of either fish, or eggs, or cold meat of some sort, with porridge of wheaten grits, or hominy with milk or cream and abundant sugar, also bread and butter, with some sweets in the form of jam, or marmalade, or

stewed fruit. Dinner, which should always be served near the middle of the day, should comprise meat, potatoes, with one or two green vegetables, and some form of sweet pudding. The supper, it is generally admitted, should comprise only easily digested articles of food, and such substances as pastry, cheese, and meats are better omitted. It should consist of either a porridge with milk or cream, or a light farinaceous pudding of rice, tapioca, sago, and the like, with bread and butter, and some simple form of preserve, or stewed apples or prunes, or very light plain cake, or a good bowl of nutritious broth with bread or crackers may be substituted for the porridge or pudding. It will sometimes be found best to serve this meal at seven o'clock or half-past seven, and if hungry the child may be given a slice of bread and butter and a cup of weak tea or coffee, mostly hot milk, at half-past five or six o'clock.

“ Children need fat, but they do not digest meat fat well, as a rule, and are very apt to dislike it. They will often take suet pudding, however, when hot mutton fat wholly disagrees with them.

“ Milk should be freely supplied not only in the form of puddings and porridges, but as an occasional beverage, and children should be made to understand that when hungry they can obtain a glass of milk, or a bowl of crackers or bread and milk, for the asking.

“ Fresh fish, eggs, and bacon are all wholesome and serviceable foods for children, and meat, as a rule, may be given twice a day, but not oftener. It may sometimes be advisable to give it but once a day when fish or eggs are supplied ; it should, however, always be

given at least once daily, and better twice to rapidly growing children. Large, strong boys require a great deal of meat, and its use should not be stinted. The larger boys may eat from seven to nine or even twelve ounces of cooked meat as a ration, although many children may not require so much, the smaller boys doing well with from five to six ounces, and the older boys with from seven to eight ounces daily.

“During midwinter, when fresh vegetables are almost unobtainable in severe climates, vigorous boys are apt to have too much meat given them, and Yeo calls attention to the fact that eczema may be produced in them by a too exclusive animal diet.

“Overeating should be guarded against. The habit of slow eating should be insisted upon.

“It is well to allow children to play but moderately immediately after eating and to require no mental work of them at such times.

“For some reason the diet in girls’ schools is apt to be much less carefully regulated than in corresponding schools for boys. This applies not only in the United States, but it has been found the common experience in England and France ; it is the more unfortunate, since girls, from their greater delicacy of constitution, especially at the period of puberty, require more careful nurture. Differences in habits and exercise and outdoor recreation, no doubt, in part, are responsible for the comparative lack of proper development in some girls’ schools as compared with boys’, but this should be recognized and regulated with as much care as the diet.

“During the establishment of puberty it is best for

children to avoid stimulating and highly seasoned food, and eating late at night. . . . Alcohol should be wholly forbidden."

The *British Medical Journal* says, in commenting on an article in the *St. James's Gazette*, on the question whether "parents underfeed their children," that "it is only too true that underfeeding prevails,—particularly in the girls' school; not the underfeeding of necessity, but the semi-starvation due to ignorance or meanness. The facts would be revealed at once, and the greatest benefit be conferred upon the life, health, happiness, and growth of children, if we could impress upon parents and teachers the value of scales and measure. Every age has its normal height and weight, and every season and every year its normal rate of growth. The diet may be inadequate in proportion to the work required to be done, especially where work is required before food, as in early morning lessons. . . . Insufficient care is taken at home, and still more at school, to provide an adequate variety in feeding. It is often the same, day after day, week after week, and year after year. The outcry against the feeding at schools, which arises from time to time, is frequently to be traced to this defect. Most of the causes of the underfeeding of children, both at home and at school, would disappear if the scales and measure were systematically resorted to, for they would instantly point out those children who were not thriving. Unnatural and unreasonable restraints would be removed by parents and teachers, if hindrances to growth were so palpably presented to them."

CHAPTER XVI.

Recipes.

THE following list is a summary of the recipes given throughout the book, with pages specified. Others are added that have been tested and considered practically as well as dietetically :

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BEEF JUICE.

Remove all fat and tissue from a half-pound of lean beef; broil over a clear fire from six to eight minutes; cut the meat into small pieces, and squeeze out the juice with a meat-press or lemon squeezer. Add salt. When warming, put the juice into a cup and set it in hot water, that it may not coagulate, as it will do if heated in the ordinary manner.

BEEF ESSENCE.

Put one pound of chopped lean beef, with a little salt, in a glass fruit-jar or in one of the porcelain compartments of an Arnold Nursery Cooker, and see that the cover is tight. If the jar is used, place it in the oven in a pan of water or in an ordinary Arnold steamer and cook four or five hours. Strain the essence through a very coarse strainer, one that will keep back the meat-pulp only.

BEEF OR MUTTON TEA.

This recipe is adapted from Burnet, and is efficacious in cases of anæmia. One pound of chopped beef or one and one-half pounds of lean mutton (chopped); no gristle or fat; ten drops of hydrochloric acid, and a pint of water. Put the beef and acid in the water, and keep it covered in a cool place for at least six hours, or overnight if possible. Simmer for two hours, strain, and salt. Remove all fat when cool. It may be used cold, or, if desired, it may be heated in a cup in warm water.

VEAL BROTH.

Veal broth is nutritious, and is the only form in which to use veal in the nursery. Use one-half pound of minced lean veal to one pint of salted cold water. Let it stand four hours, then simmer slowly (it should not reach the boiling-point) for two hours, strain through a coarse sieve, and skim when cool.

MUTTON AND VEAL BROTH.

Use one pound of meat, half mutton and half veal, to a pint of cold salted water, and proceed as above. Barley or rice may be added, a tablespoonful of either, well boiled. Milk thickened with flour is a pleasant addition to the above or to plain mutton broth.

CHICKEN BROTH.

Cut up a chicken, bones and all, into small pieces, put them over the fire in cold water, add a little salt, and simmer for six hours. Cool, remove the fat, and keep the jelly covered in a cool place. This yields a very strengthening soup, which may be made the base of many a delicate dish for children or invalids.

CHICKEN CUSTARD.

Use chicken broth instead of milk, with beaten eggs, in the same manner as when making cup custard, seasoning with salt instead of sugar. Serve cold or warm, with or without thickened chicken broth.

Burnet strongly advises the thickening of broths with arrowroot, boiled flour, etc. They may also be

thickened with gelatin. Chicken broth is especially nice when done in this way.

OYSTER BROTH.

Chop six fresh oysters and heat them in an agate saucepan, letting the liquor which exudes from the oysters come to a boil. Add a very little hot water, season, and serve after straining. This is very nice with buttered crackers.

CLAM BROTH.

Put a few well-washed clams in a clean pan in a hot oven, or in a steamer over a hot fire. When they open, drain off the liquor and add an equal quantity of hot water. Season to taste and thicken with grated cracker, if desired, or serve plain with buttered crackers.

POTATO SOUP.

Peel one dozen potatoes and one onion and cut them into small pieces. Cook them tender in a quart and pint of beef-stock, plain water, or vegetable water (page 69), and rub the potato through a purée sieve. Add salt and a half-pint of hot cream. Beat lightly, and serve with bits of zwieback or dry toasted bread broken into small bits into the soup plate.

SAVORY JELLY. (Adapted from Burnet.)

Take half a chicken, one pound of neck of veal, one pound of lean beef (from under the shoulder is the best part for beef tea, etc.). Separate the joints of the chicken, then cut all the meat—beef, veal, and chicken

—into very small pieces; put the whole in an earthen covered vessel with two quarts of water and enough salt to season; stew gently in the oven for five or six hours; skim, strain, and keep cool. This is a very nutritious jelly, and it may be made very easily in the “Nursery Cooker” mentioned before.

ROAST BEEF GRAVY.

The thick brown essence in the pan, called ozmazome, should be dissolved in a little water after the fat has been poured off. It may then be thickened and seasoned in the usual manner. Gravy made from fried meats must not be used in the nursery.

A HOME-MADE MEAT POWDER.

Dr. W. R. Huggard (*Muenchener Medicinische Wochenschrift*) gives a convenient method of preparing a powder from meat to be used as a nutrient. Lean meat is cut into small pieces; these are dipped into boiling fat for a few minutes, until the surface is browned, then taken out and drained on a sieve. They are then cut into fine pieces and dried in an oven for twenty-four hours with a slow fire. The meat thereby becomes dry and brittle, and may be easily ground in a coffee-mill. By this process of roasting it has lost four-fifths of its weight. This meat powder has a pleasant taste, and may be used in various ways, as in hot water, mixed with mashed potato, on bread and butter, as a sandwich, in soup, milk broths, etc. It is very easily digested, is tolerated by the most delicate stomach, and may be kept, if dry and excluded from the air, for a long time.

EGG CUSTARDS WITHOUT MILK.

Ingredients required.—Four eggs, two tablespoonfuls of sugar, the juice of an orange or a lemon, or a teaspoonful of vanilla.

Beat the yolks well with the sugar, and pour them into a double boiler. Stir over the fire until the mixture thickens, then add the flavoring and the whites of the eggs, which should have been previously beaten to a froth. Stir a few minutes longer, and pour into a mould and cool. These custards may be made also with salt, meat juice, celery, or chicken broth for a pleasant variation. Inasmuch as there is always great demand for new dishes that are not sweet, it may be well to remember that this plan may be followed with tapioca, sago, rice, and many other farinaceous foods that are generally used in sweet puddings if used at all. It requires very little originality to make a palatable and wholesome dish of any of the above-mentioned articles without following the stereotyped plan of sweetening and flavoring. The following recipe is an illustration of this method :

TAPIOCA WITH CHICKEN OR MEAT JELLY.

Wash one-half cup of tapioca, and put it into a double boiler with one-half cup of cold water. Let it absorb the water, then add a pint of chicken broth, milk jelly, or any meat infusion, and cook until the tapioca is soft and clear. Season with salt, and mould. Serve hot or cold as preferred. For another change, a well-beaten egg may be stirred into the tapioca when it is taken from the fire. These moulds are very ap-

petizing when served with a little of the same broth or essence that has been used in making the jelly if thickened and daintily seasoned.

A SAVORY BREAKFAST CUSTARD.

Fill a custard cup lightly with bread crumbs, and, if convenient, add a little minced chicken. It is equally good without. Beat an egg, add a little milk, season, and pour the mixture into the cup over the crumbs. Bake in the oven in a pan of hot water for but a few minutes, as eggs must be lightly cooked to be digestible.

POACHED EGGS.

To poach eggs for the nursery, drop them in steaming water that has just stopped boiling, having added sufficient salt to taste before putting the water on to boil. Set the water containing the eggs back upon the stove. From five to eight minutes will cook them sufficiently. Eggs poached in this way and served on toast are further improved by the addition of chicken broth slightly thickened.

CEREALS.

Malted Gruel. (Adapted from Thompson.)

Gruel should be well boiled and kept free from lumps, using a strainer if necessary. When cool enough to swallow, add a tablespoonful of malt extract to a pint of gruel. In a few minutes the gruel will become thin from the conversion of the starch into maltose. All farinaceous foods can be treated in this way.

Oatmeal Gruel.

Four tablespoonfuls of rolled oats, one-half teaspoonful of salt, one teaspoonful of sugar (if directed by the physician), two cupfuls of boiling water, two cupfuls of hot milk (or four cupfuls of water and no milk). Pour the boiling water on the oatmeal, salt, and sugar, if used, and cook in a double boiler for three hours, or cook in an agate saucepan for one hour, stirring frequently, if a saucepan is used, and adding water to keep to the original quantity. Strain to remove the hulls, and add the hot milk, bringing all to the boiling-point. If no milk is used, add all the water in the beginning.

Two tablespoonfuls of oatmeal and two of Graham flour, with salt, a pint of water, and a quart of milk, make a pleasant change in gruels. Cook the water, salt, and meal for one hour in a double boiler or steamer; then add a quart of milk and scald or steam, according to the vessel used, for a few minutes only. Strain and keep cool.

If gruels are to be malted they need not be cooked so long as for ordinary use. One hour in a double boiler, or half an hour in a saucepan, is sufficient.

Barley Gruel may be made in the same way as oatmeal gruel, using barley that has been ground fine in a coffee-mill.

Farina Gruel is made in the proportion of two tablespoonfuls of farina to two cupfuls of water and two of milk, with salt to season; but it does not need long cooking, as it is partly prepared. Half an hour is enough for the whole process.

Arrowroot Gruel.—One tablespoonful of arrowroot, one-half teaspoonful of salt, one cupful of milk. Wet the arrowroot with a little cold water, add a cupful of boiling water, and boil ten minutes; then add the milk and bring again to the boiling-point. Strain and keep cool.

Oatmeal Porridge.

Three tablespoonfuls of rolled, ground, or crushed oats, one pint of boiling water, one-quarter teaspoonful of salt. Steam for two hours or longer in a double boiler or “Nursery Cooker,” which is desirable for all preparations of cereals, and is especially designed for nursery cooking. The vessels in the “Cooker” are porcelain-lined, which is a great advantage.

Oatmeal porridge is very appetizing when served cold in mould shapes, and it will frequently be eaten in this way when it would be refused if served in any other form. Variations may be made by using farina, cracked wheat, browned rice (browned in the oven before steaming and moulding), hominy, arrowroot, etc., giving further change for older children by serving occasionally with fruit juice instead of cream or milk.

Wheat Porridge requires two tablespoonfuls of wheat to a pint of salted water, and it should be thoroughly boiled or steamed in a double boiler or a “Cooker,” two hours being the shortest time to be allowed for the cooking of any porridge.

Hominy requires the same proportions, and should be cooked for the same length of time.

Cornmeal Mush (to be used warm or moulded, for

supper or breakfast, with milk or a little good syrup) should be cooked very carefully in a double boiler or steamer for the time given for the cooking of all cereal porridges, and it should be free from lumps when done. A very good plan to follow when cooking cornmeal or bran mush is to sprinkle the meal into a saucepan of boiling water from a fine sifter, stirring all the time, before putting it into the steamer, as freedom from lumps depends upon the even admixture of the water and the meal.

Farina Porridge requires three tablespoonfuls of farina to a pint of hot salted water, and it should be cooked at least an hour in the steamer or double boiler.

Oat Jelly. (Rotch.)

Four ounces of coarse oatmeal are allowed to soak in a quart of cold water for twelve hours. The mixture is then boiled down so as to make a pint, and is strained through a fine cloth while it is hot. When it cools a jelly is formed, which is to be kept on ice until needed. Different proportions of this jelly can be used, but usually it is best to begin with equal parts of jelly and cow's milk. When needed, this mixture is warmed and a little salt is added.

CREAM MUFFINS.

To make one dozen, beat up one egg very light; mix it with four tablespoonfuls of rich sweet cream, a little salt, and a scant half-cupful of milk. Sift in slowly one and a quarter cupfuls of whole-meal flour and two teaspoonfuls of a well-selected baking-powder.

Bake in a very quick oven (about fifteen minutes should suffice), putting very little batter into each muffin-pan, that the muffins may puff up and be nearly all crust, as they should undoubtedly be for nursery use.

Graham and Cornmeal Muffins may be made in the same way, using Graham or corn flour in the place of whole-meal flour.

Cornmeal Muffins are delicious when made with half cornmeal and half hominy (breakfast hominy, well cooked). Stir a teaspoonful of sweet butter into three-quarters of a cup of hot hominy ; add the egg, salt, cream, and milk ; then stir in three-quarters of a cupful of corn flour and the baking-powder, and bake as directed above, remembering to keep the mixture of a consistency to pour easily, as in this way the muffins will be light and crusty instead of heavy and indigestible.

APPLE BREAD.

A very light, wholesome, and palatable bread is made of apple-pulp and flour. The apples are pared, boiled, and beaten to a pulp. The usual quantity of yeast is employed as in making ordinary bread, and is beaten with flour and the warm apple-pulp. It is allowed to rise, and in fact the process is the same as usual. Very little water is requisite. This bread is highly relished by children. (*Household*, of Boston.)

MAPLE MOLASSES GINGERBREAD.

One cupful of boiling water, a piece of butter the size of an egg, one cupful of maple molasses, one-half

teaspoonful of soda, one-half teaspoonful of ginger, two cupfuls of flour. Common molasses may be substituted for the maple molasses, but the flavor will not be the same. (*Household.*)

A WHOLESOME SPONGE-CAKE.

First sift the flour and sugar. Whisk the whites of the eggs stiff. Beat the yolks of the eggs very light in a large bowl, then stir in very gradually the sugar and a tablespoonful of milk; add the whites, blending all well before gently stirring in the flour and a heaping teaspoonful of baking-powder. Bake in a well-buttered mould for one hour in a moderately quick oven. The proportions for a small cake are three eggs, one and a half cupfuls of flour, and one cup of pulverized sugar. The batter should pour easily.

RICE PUDDING WITH EGGS.

As eggs should be cooked lightly to be digestible, they should not be added to farinaceous or milk puddings when first mixing, as is the usual custom. For rice pudding steam the rice tender in milk, using four teaspoonfuls of rice to a pint of milk; allow it to cool for a few minutes before stirring in two well-beaten eggs, which should not curdle, but should be partly cooked by the hot rice. Sweeten to taste, and add vanilla, lemon, or any flavor desired. Grated nutmeg is very nice. Brown lightly and very quickly in a very hot oven. The above may be varied by pressing the rice through a purée sieve when hot. Add the eggs and flavoring, omit browning, and steam the whole mixture for only a few minutes in a double boiler.

The yolks also may be omitted if a white pudding is desired, using four whites in place of two whole eggs. This need not be steamed after mixing if the whites have been beaten stiff.

RICE PUDDING WITHOUT EGGS.

Put two tablespoonfuls of rice into two cupfuls of sweetened and flavored milk, and set it in a moderately hot oven. Stir every fifteen minutes at first, and every half-hour while the top forms. Any good cook understands the process, which, if carefully followed for two hours, produces a creamy, slightly brown pudding that is invariably relished by children. A few raisins may sometimes be added for children over five years old.

SNOW PUDDING. (Burnet.)

Put into half a pint of cold water half a package of gelatin; let it stand one hour; then add one pint of boiling water, half a pound of sugar, and the juice of two lemons. Stir and strain, and let it stand, covered, in a cool place all night. Beat the whites of two eggs very stiff, and then beat them well into the mixture. Pour into a mould.

BREAD PUDDING.

Soak one pint of fine bread crumbs in a pint of milk until soft, add three tablespoonfuls of cocoa dissolved in a little water or a dessertspoonful of vanilla for flavoring, three well-beaten eggs, a cupful of granulated sugar, and another pint of milk. Either plain or whipped cream is very good with this pudding.

BROWN BETTY.

Alternate layers of sliced apples and dry bread crumbs, just enough crumbs to cover the apples. Add bits of butter, sugar, and ground cinnamon. Do this until the pudding dish is full, having bread on the top. Pour half a cup of molasses or milk and half a cup of water over the whole, set the dish in a pan of boiling water, and bake in a moderately hot oven for three-quarters of an hour. Serve with cream.

FRUIT TAPIOCA PUDDING.

Boil one-half cupful of pearl tapioca in one quart of boiling water until soft and transparent. Add one-half teaspoonful of salt and one-half cupful of sugar; pare and core three tart apples, or three pears, and fill the centres with sugar and a little cinnamon or cloves; put in a baking dish, pour the tapioca around them, and bake until the fruit is tender. Serve hot or cold with cream.

STRAWBERRY CUSTARD.

Make a boiled custard with the yolks of five eggs, one quart of milk, one-half cupful of sugar, and one-half teaspoonful of vanilla. Crush and strain one pint of berries, and mix with them one-half cupful of powdered sugar. Gradually beat this into the well-beaten whites of four eggs. If the fruit is very acid, more sugar will be required. Serve the custard in small glass cups, and pile the strawberry float on top. (*Household.*)

RASPBERRY BLANC-MANGE.

Any blanc-mange may be made with fruit juice according to the following directions :

Into a pint of boiling fresh milk stir two tablespoonfuls of corn starch made smooth in a little cold milk. While thickening, add two tablespoonfuls of sugar and one-half cupful of raspberry juice, and turn into a double boiler, where it should be steamed for half an hour. Place in moulds (tiny cups are desirable for nursery use), cool, and serve with sweet cream.

CHERRY JELLY.

Use one pint of cherry juice instead of cold water to soak the required amount of gelatin ; add the juice of two lemons, two cups of sugar, and three cups of boiling water. Some may prefer a trifle more sugar. Sweeten to taste, and seal in jars or tumblers.

RHUBARB AND ORANGE JAM.

Allow one quart of finely cut rhubarb, six Valencia oranges, and the same weight of sugar as of fruit. Peel the oranges, remove as much of the white pith as possible, divide them, and take out the pips. Put the pulp, half the rinds, and the rhubarb, peeled and cut up, into the scales, weigh, and allow the same quantity of sugar as of fruit. Then put all into the preserving kettle, bring to a boil, skim, and simmer for an hour, or until done.

DATES AND CREAM.

Remove the stones from dates, then cut them rather fine, and put them in a glass dish ; cover them with

whipped cream, and stand aside in a cold place for thirty minutes before serving. You will have a dainty and wholesome dessert that can be eaten by the children of the family.

Dates and figs may be washed, soaked overnight, and stewed slowly, adding a little lemon juice if liked.

JELLIED APPLES.

Pare and slice thin a dozen or more tart apples. Place in a pudding dish alternate layers of apple and brown sugar, and a sprinkling of cinnamon, and when the dish has been filled in this way, pour over it one-half cup of water. Lay a buttered plate over the top, and cook slowly for three hours. Set in a cold place, and when ready turn out into a glass dish. Whip half a pint of cream and pile it up around the jellied apple.

APPLE SNOW. (Adapted from Davies.)

Reduce two apples to pulp, press this through a sieve, sweeten, and flavor. Have ready the whites of two eggs, beaten stiff. Beat the apple-pulp to a froth, and whisk the two together until they look like stiff snow.

RHUBARB JELLY.

To be made in May. Wash the stalks, and cut without peeling; cover with cold water and simmer until soft. Then proceed in the usual manner, letting the juice drip through a jelly-bag; do not squeeze. Use one pound of sugar (granulated) to a pint of juice, and boil fifteen minutes. Heat the sugar in the oven, stirring frequently; add it at the end of the fifteen min-

utes' boiling, and stir until it comes to a boil. Strain through cheese-cloth, pour into jelly-tumblers, and cover with melted paraffin, a second layer after the first has cooled.

RHUBARB MOULD. (Davies.)

One quart of red rhubarb cut in pieces, put into a covered saucepan. Let it boil until it is a pulp ; soak half an ounce of gelatin in cold water, pour just enough boiling water over it to dissolve it ; add to it the rhubarb, with sugar to sweeten ; let it boil fifteen minutes ; add a few drops of essence of lemon. Butter a mould and pour in the rhubarb. Next day dip the mould in hot water, and turn out on a glass dish.

RHUBARB JAM.

Rhubarb jam is desirable for nursery use, and may be made in the proportion of a pound of sugar to a pound and a quarter of rhubarb, adding a little lemon peel. Boil one hour after the sugar has dissolved.

ORANGE JELLY.

Dissolve three-fourths of a box of gelatin in one and one-half pints of water ; add one-half pint of orange juice, sugar to sweeten, and the juice of one lemon. Boil, strain, and cool, and keep covered until used.

SAGO JELLY.

Soak one cup of sago overnight in one pint of cold water. In the morning add one pint of boiling water. Boil in a double boiler one hour ; add one teaspoonful

of salt, one cup of sugar, and one teaspoonful of lemon juice. (*Trained Nurse.*)

PRUNE JELLY.

Cover one pound of prunes with one quart of water ; cook slowly. Add sugar to sweeten, and one-half box of gelatin dissolved in a pint of water and boiled. Strain, cool, and keep covered.

CLARIFIED APPLES.

Prepare the apples as for sauce, in even-sized pieces, and simmer until tender in the boiling sugar and water, turning the pieces once, using a flat agate saucepan, from which it is easy to remove the pieces of apple without breaking them as they become tender. Use a pint of sugar to a quart of water for the syrup. Cook the syrup for ten minutes after the apples have been taken out, then pour it over them, sprinkle with cinnamon, and let them cool in the syrup. Orange or lemon juice may be used for flavoring.

APPLE WATER.

Mash two large tart apples that have been sprinkled with sugar and baked tender and slightly brown, and pour over them a pint of boiling water ; let stand covered in a cool place for an hour or two, strain, and use.

IRISH MOSS TEA.

Take a handful of Irish moss that has been washed and drained ; pour cold water over it, and let it simmer on the back of the stove until it is dissolved ; then strain and mix with lemon juice and sugar. This is said to

be excellent in rheumatic affections. If one is troubled with a dry, hacking cough at night, it will often give relief if kept near the bedside and frequently sipped.

FRUIT SAUCE.

Mash a quart of ripe fruit ; beat it, sift a cupful of sugar over it, and set away ; if the fruit is very sweet, less sugar will be required. About ten minutes before the sauce is needed, set it over the fire and stir constantly ; when heated nearly to boiling, turn it about the base of the pudding, which has been placed in a deep platter. If the pudding boiler has a tube in the centre, as it usually has, there is, of course, a hole in the centre of the pudding, and this may be filled with the fruit sauce, which is, by the way, as attractive in appearance as it is delicious in taste.

MARSHMALLOW DROPS.

This is a confection greatly relished by many, healthful and unobjectionable. It can be made quite conveniently at home ; if the best of materials are used and care is exercised, the product will be fully equal to any that the market affords, and it can be made at any time and in any quantity to suit the occasion. Few people have an idea of the ingredients used or of the manner of their use, but here is the whole secret : A half pound of gum arabic is to be dissolved in a pint of water ; strain the solution, to remove any specks or organic matter contained in the gum, then add one-half pound of white sugar ; place the whole over a moderate fire, and stir continually until the sugar is dissolved and a honey-like consistency is reached ; then

add, little by little, the whites of four eggs, thoroughly beaten, and stir the mixture till it becomes thin and will no longer adhere to the finger. The marshmallow factor is added by flavoring with as much tincture of marshmallow as may be desired. The compound is then poured into a tin or earthen vessel which has been lightly covered with powdered starch ; when cool, it is cut into squares, which are also dusted with the starch, and the process is completed. (*Good House-keeping.*)

ORANGE SYRUP.

Squeeze the juice of thin-skinned oranges through a sieve, and to every pint add one and one-half pounds of powdered sugar and the juice of one lemon. Boil the syrup fifteen minutes, and skim as long as any scum rises. Strain it, bottle, and seal up tight, and it will keep a long time. Added to a glass of water it makes a delicious drink for an invalid.

LIME WATER.

Lime water is easily made at home for nursery use by putting a piece of unslaked lime the size of a walnut into two quarts of filtered water in an earthen vessel, and stirring thoroughly ; allow the mixture to settle, and pour off the clear solution as required for use, replacing the water and stirring up as consumed. (Yeo.)

RICE WATER.

This is a useful drink in dysentery, diarrhœa, etc. Wash well one ounce of rice in cold water, then soak for three hours in a quart of water kept at a

tepid heat, and afterwards boil slowly for an hour and strain. It may be flavored with lemon peel, cloves, or other spice. (Pavey.)

RICE MILK.

Soak one ounce of rice for twelve hours, wash it quite clean, and drain it. Add the soaked rice to a pint of boiling milk, with half a teaspoonful of salt and sugar. Stir well and cook slowly for one hour. Rub through a hair sieve. Sago or tapioca may be substituted for rice. (Yeo.)

BREAD JELLY.

Take four ounces of bread crumbs two or three days old, soak in cold water for six or eight hours, then squeeze all the water out of it (lactic acid and other peccant matters are thus removed). Place the pulp in fresh water, and boil gently for an hour and a half to break up the granules of starch and promote its conversion into dextrin and glucose. Rub this semi-fluid gruel through a fine hair sieve; when cold it forms a smooth jelly. It will not keep long. (Yeo.)

MULLED EGG.

To be used in diseases in which the symptom of cough shows a certain degree of persistence. It is simply an emulsion of the yolk of egg in warm water, sweetened and seasoned to taste. It is prepared, as is well known, by mixing powdered sugar, the yolk of an egg, and a coffeespoonful of orange-flower water, adding boiling water gradually while stirring the mixture. (Fonssagrives.)

KOUAMYSS.

With a little attention to some important details, koumyss may be readily made by any one, the sole ingredients requisite being milk, sugar, and yeast. A clean quart bottle is filled three-fourths full of perfectly fresh milk, and to this is added a tablespoonful of fresh brewer's yeast, or one-fourth of a cake of compressed yeast, and a tablespoonful of white sugar. The bottle is thoroughly shaken, and then filled with milk to within two or three inches of the top, and again shaken. It is then tightly corked with a cork that has been softened by soaking in hot water, and for this purpose a corking machine should be employed. When the cork is driven home it is properly tied down. The bottles are now placed in an upright position in a cold place, at or near the temperature of 52° F., where they should remain two or three days. They are then put on their sides in a cool cellar or refrigerator. Koumyss is at its best probably when five or six days old, but can be kept indefinitely at a temperature not exceeding 52° F. (Frederick P. Henry, M.D.)

WINE WHEY.

Boil a quart of milk, add to it half a pint of wine; put on the fire till it boils again, then set aside till the curd settles; pour off the whey and sweeten to taste. It is said that good country cider is as nice as the wine. (*Trained Nurse.*)

BARLEY WATER WITH WHITE OF EGG.

Take a tablespoonful of coarse barley and wash well with cold water, rejecting the washings. Then boil for

an hour or more with a pint and a half of clean water, in a covered vessel or saucepan. Add a pinch of salt and enough sugar to render palatable, and strain. To four or six ounces of barley water thus prepared add the white of one egg.

The value of this preparation in gastro-intestinal inflammation and irritation is not easily overestimated. In the enterocolitis (inflammation of the small intestine and the colon) of very young infants its exclusive administration for thirty-six or forty-eight hours will often relieve when all other measures have failed. (J. Hobart Egbert, M.D.)

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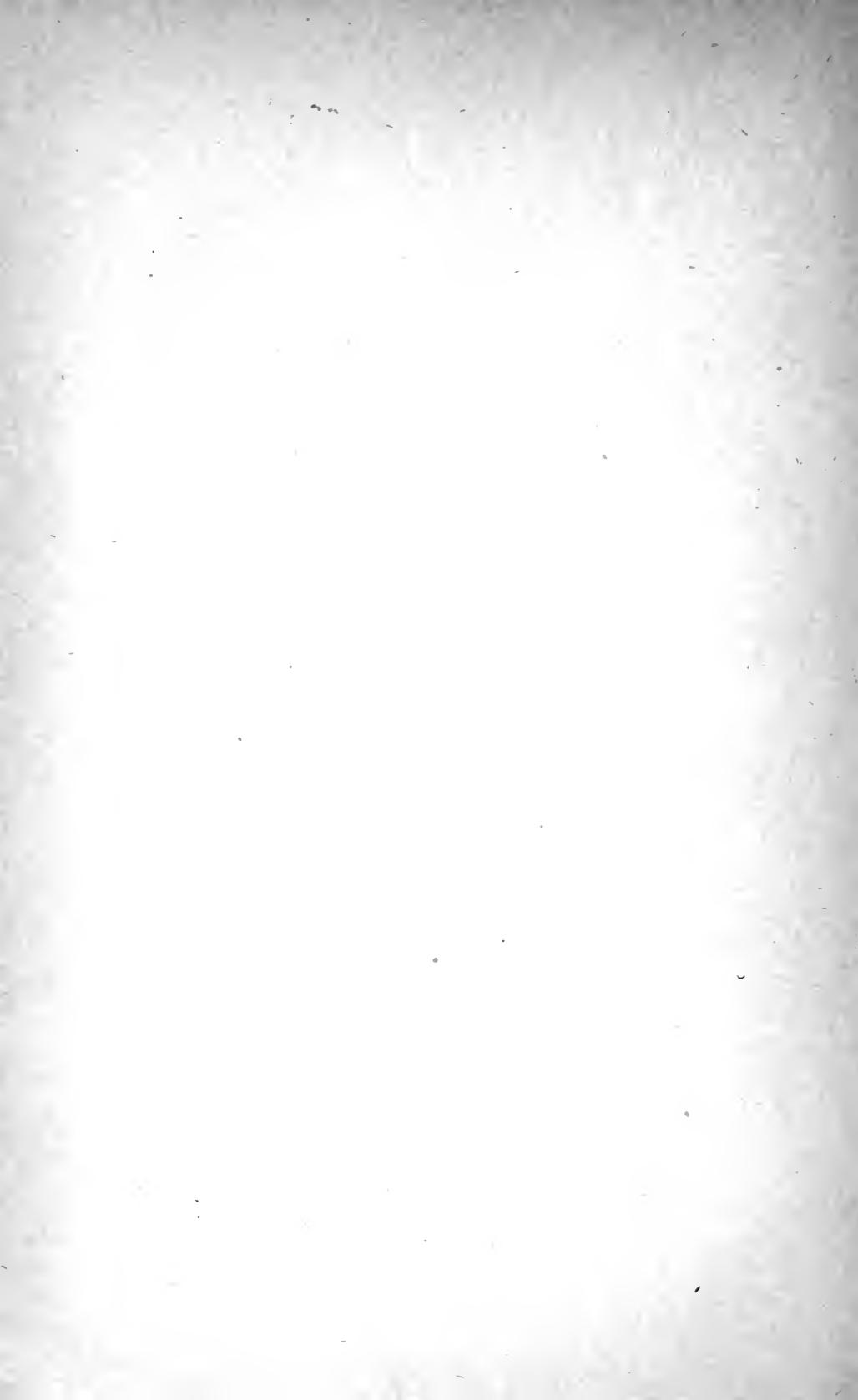
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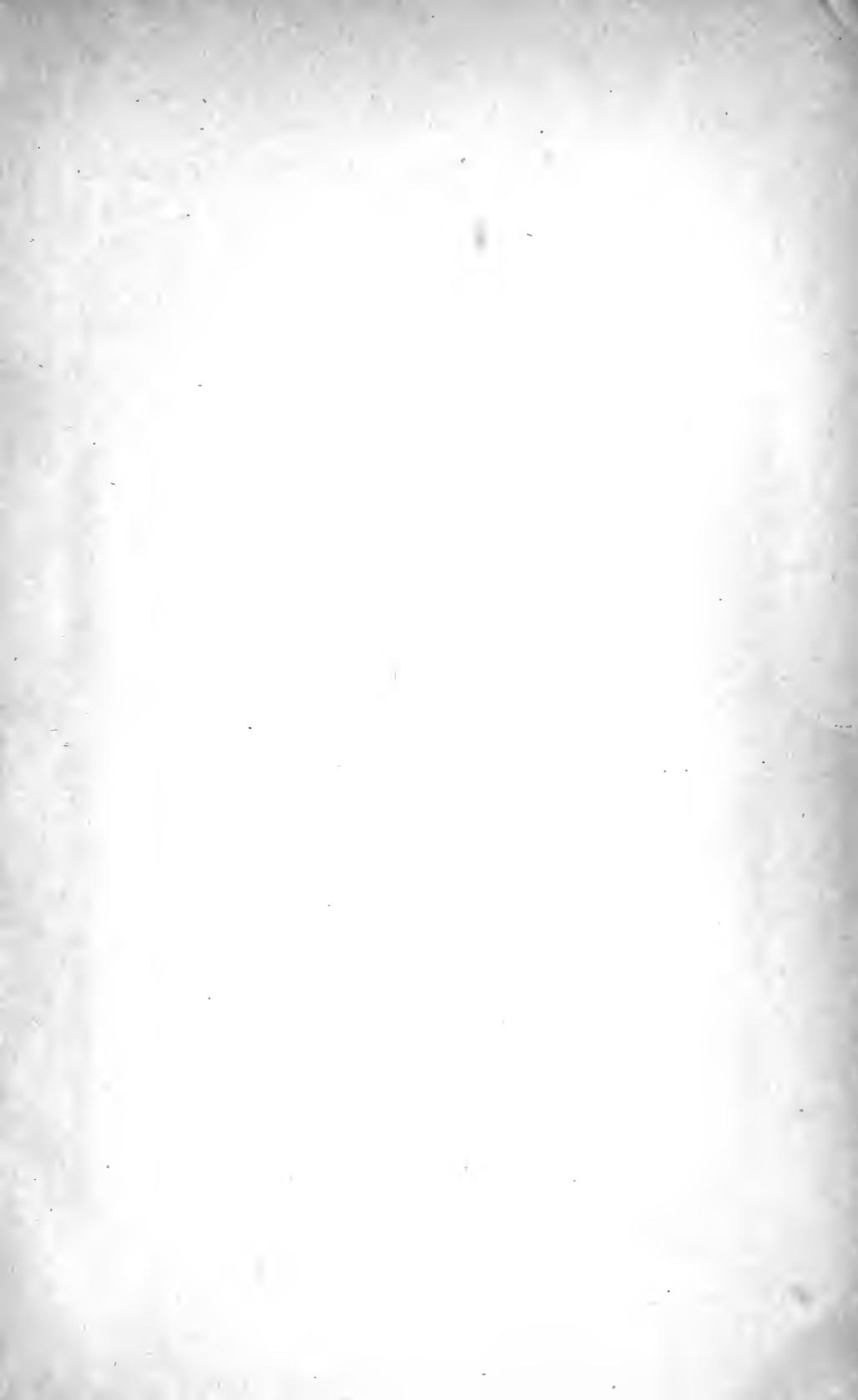
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